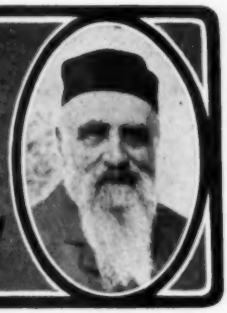
AMERICAN BEE JOURNAL



Vol. LXVII—No. 8 Hamilton, Illinois, August, 1927 Monthly, $1.50 a Year

Comb Honey On the City Market

By Natt Noyes Dodge

THE demand for comb honey has gradually become lighter and lighter. This is due in part to a somewhat greater public confidence in the purity of the extracted article, but is based more upon the reluctance with which the various dealers are willing to handle sections.

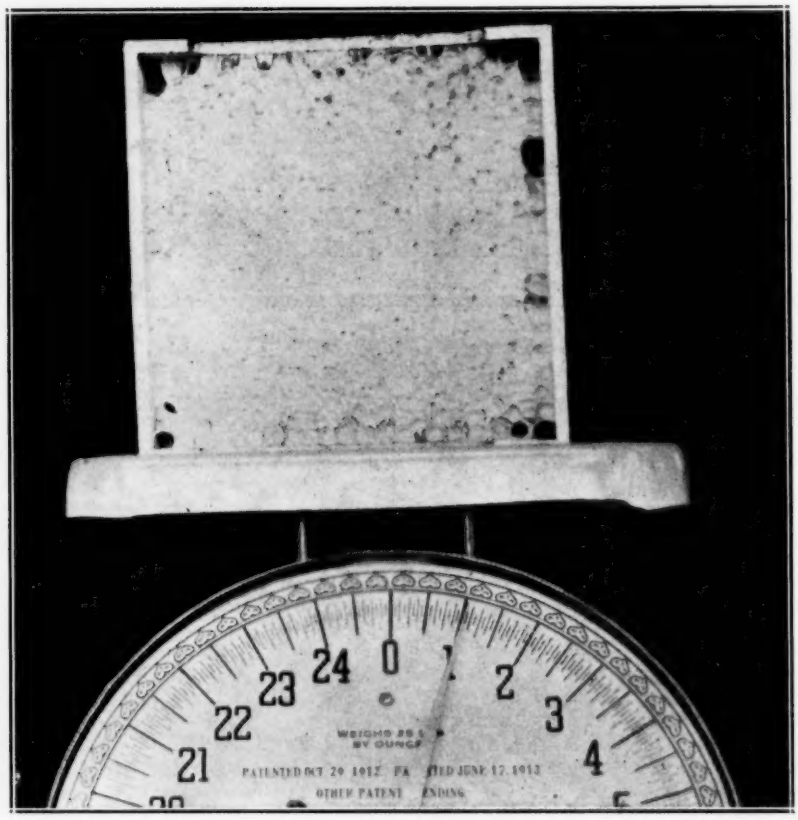
Comb honey is more or less a perishable commodity, and for that reason dealers stand a chance of having to take a loss from shrinkage. The relatively small margin of profit which it carries is not sufficient incentive to over-ride the possibilities of loss. Because it is fragile, comb honey must be carefully packed to insure safe shipment, and leaking cases not only mean a loss to someone, but make a sticky, unpleasant mess in cars, express and freight sheds, and warehouses. Many retailers find that the commodity moves so slowly that a case of two dozen sections often lasts several months, the final combs becoming dusty, commencing to "sweat," and in some cases even granulating so that they must be closed out at a low figure. If placed on display, comb honey offers a tempting field of exploration for the finger of some inquisitive youngster, the "lickings" provoking a second attempt sometimes on a fresh comb.

A certain amount of comb honey finds its way into the city groceries each year, and in some localities a fairly lively movement is experienced during some seasons. Other stores report a rather slow but constant demand all the time, while a large majority are unable to move it at all. As long as the demand, slight though it be, remains, bee men will find it to their liking to continue comb honey production. It is to be hoped that by a study of conditions governing the demand for honey, this delightful product of the hive, may be handled to the satisfaction of all concerned, and become a common sight on every dining table.

Several rather general conditions prevail in the retailing of comb honey, which, if better understood by the producers, may help the industry in anticipating the desires of both retailer and consumer, and thus increase the chances of finding sale for this healthful delicacy. In the first place, generally speaking, the producer who takes great pains to produce a heavy section, thus sacrificing the quantity harvested, is wasting his time unless he has a particular market for the fancy product. This statement may seem both blunt and uncalled for in the face of the many appeals urging beekeepers to work for weight in the sections. However, the other extreme, a light or an unfinished section, is even worse. In the second place, the producer should take stock of production costs and discover, if possible, if it pays him to produce comb honey so that it goes to the retail grocer at from $4.50 to $4.75 per case of two dozen sections. To the average consumer a comb of honey is a comb of honey. Net weights are unknown quantities rarely considered, the fact that one comb weighs fifteen ounces while another weighs but ten making no impression unless the two are in sight at the same time, the difference in appearance being noticeable by the contrast. In the large run of stores, comb honey sells over the counter at 25 cents per section, regardless of weight, sometimes the fact that part of the cells are not capped raising no objection from the purchaser. The retailer who demands more than this is liable to find his comb honey customers going elsewhere, while he who finds it possible to cut under does not increase volume of sales sufficiently to make up the difference. The factor of weight makes no difference in the price which the consumer will pay unless the grocer explains all about it, which he will not take the time to do. A twelve-ounce section is well received by the customer and seems to be the standard weight approved by the grocers. If the grocer can purchase this weight at $4.50 to $4.75 per case of two dozen sections, he feels that his margin is satisfactory at a 25-cent selling price per section.

Beekeepers who have built up a trade through city groceries often find that they can move considerable comb honey if they will "break case." Small store grocers who would never consider taking a whole case of sections will take a chance on six or a dozen. The beekeeper finds that in this way he will often sell four or five cases of comb honey where he would sell but one if he refused to break a case. If small groceries could readily obtain comb honey in quantities smaller than the two-dozen section case, many more of them would carry and display this product, thus making it available to a larger portion of the public. Since case breaking is impractical for the jobbers and wholesale grocers, it is safe to say that more comb honey would be sold if a portion of the crop were packed in cases or cartons of one dozen capacity.

Again, contrary to all teachings, dark comb honey is not always considered low in quality or even secondary to the white. In some stores there is a decided preference for the amber article. The beekeeper must take great care in grading his product, thus placing only dark sections in certain cases, and he will find ready market for them in groceries whose patrons prefer the amber combs. Uniformity of color and weight is essential and the beekeeper cannot be too careful in his grading, for contrast immediately arouses the



The factor of weight makes no difference in the price to the consumer

selectivity instinct in the shopper, causing no end of trouble for the grocer.

There can be no hard and fast rules laid down for the marketing of comb honey; only general averages can be followed. Groceries catering to a wealthy class of trade often receive 35 and even 40 cents per section for comb honey. For this class of trade the retailer should have a fourteen- or fifteen-ounce extra fancy section, but the producer should receive an extra fancy price for the care and labor expended in getting it for him. The average housewife who must make a slender income cover the largest purchasing field possible feels that 25 cents is all that she can afford to pay for a comb of honey.

In summing up the conditions governing the movement of comb honey in the city groceries, the following qualifications seem best fitted to bring satisfaction to all concerned: a twelve-ounce section carefully graded so that each container is filled with uniform combs packed in cartons or cases, a portion of which are of one dozen capacity, and which can sell over the counter at 25 cents per section, thereby giving the grocer a comfortable and safe margin.

Washington.

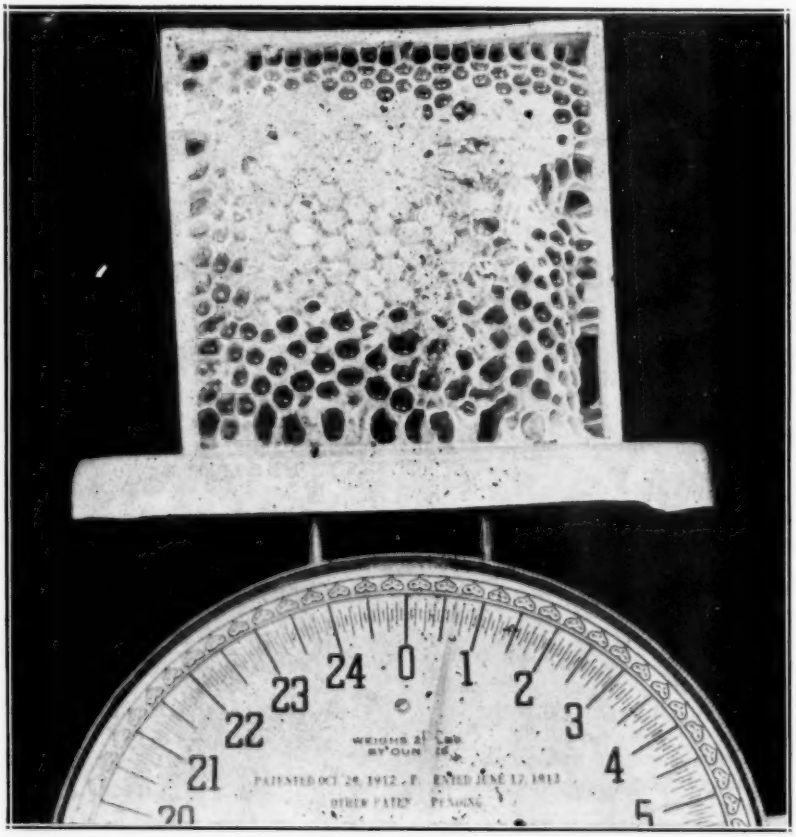
Rapid Increase In Canadian Honey Production

Honey production of Canada is increasing at a rate that has raised the output 300 per cent in the last five years, according to a report issued by the Dominion apiarist.

Beehives in Canada turned out 21,000,000 pounds of honey in 1926, the report points out, compared with 7,000,000 pounds in 1921. Value of last year's output was $4,100,000, of which Quebec contributed $2,300,000 and Ontario $1,400,000. The prairie provinces of Manitoba, Saskatchewan and Alberta, where beekeeping was practically unknown a few years ago, accounted for a value of $381,000.

Development of the industry has been largely due to a campaign by the Canadian government inducing farmers to engage in beekeeping as a sideline. Honey production per hive is greater in Canada than in most countries, due to the warm summers and abundance of nectar-producing flowers until frost.

Canadian honey is building up an extensive market in foreign countries. Exports in 1926 amounted to 1,013,990 pounds, worth $96,583. Germany, the Netherlands and the United Kingdom were the principal purchasers.



To the average consumer a comb of honey is just a comb of honey

Wholesale Marketing In Australia

By John H. Rosser

WE produce as individuals and attempt to market as individuals, while marketing should be done collectively. We honey people have enough to compete with, without competing with one another.

Australia is as big as the United States; its people are scattered on three sides of its coastal area and the total population is just over six million, although we are divided into six states, five of which have beekeepers, and although these states are as far apart as New York and California, because they are so few in number, and because we are so directly affected by crop surpluses in neighboring states, we think as Australians. The honey problem is an Australian problem.

New South Wales gave the lead to the cooperative movement that is just under way and, through its leading cooperative marketing society, has succeeded in having all states but Queensland and Northern Territory to join in a marketing plan for both local and export marketing.

Mr. Pender, who is our leading bee supply maker and the proprietor of our bee journal, has put in a tremendous amount of work for this, and I believe has been the prime mover. All his work and travel have been done at his own expense.

He is applying Ford's ideal of service and undoubtedly rendering the beekeepers of Australia a wonderful service in organizing a marketing system.

In New South Wales the "Producers' Distributing Society," a cooperative organization, has handled 60 per cent of the wholesale trade for some years, but interstate imports hindered their attempts to control wholesale prices. Two years ago they started to organize the neighboring states, and today all but Queensland and Northern Territory (Northern Territory has no beekeepers to mention, and hardly any people,) have 60 to 90 per cent of producers supplying the wholesale market through the cooperative houses. For export, this chain of cooperative houses deal through their federated house in London and export of Australian honey on an organized plan has just started.

An Australian beekeeper and business man has left for England and Europe to assist in the first consignments, as a prejudice exists against Australian honey in England. For the local market, honey carts have been started in the cities and a little advertising done. In Queensland we have an agricultural organization act that enables compulsory control of any product if two-thirds of the producers wish to have this compulsory control.

The success of the existing control boards can be guaged from the increasing majority that is given each time to the question of continuing the respective "boards."

About 90 per cent were in favor at a recent ballot. In one product, pineapple, the whole crop was sold at 4 shillings per case, whereas before the pool control came pineapples were unsalable in the season.

The honey producers of Queensland failed by 3 per cent to reach the 66 per cent needed to obtain compulsory control of honey and recently asked for another ballot to be taken. This, for several reasons, has not yet been done, but action has now been taken that should end the matter. A few months more should complete Australian organization.

Nothing definite has been done with regard to the retail market, but no doubt it will be attended to in time.

I have read articles on advertising and marketing in the American Bee Journal, and, while each article may give undeniable facts, few seem to me to tackle the problem as a whole.

Take advertising—its success is undoubted, if well done, but it is no use advertising unless supply is organized. Take supplying good quality honey—quite essential, of course, but not enough unless you let folks know you have it—unless, in other words, it is advertised.

The marketing problem wants to be tackled from the bottom up; arrange for a continuous supply to be available, have as few brands as possible, then advertise those brands.

If you have neighboring states that cut prices and spoil the market that way, then the first problem is to organize your own and neighboring states.

Australia.

Miller Memorial Apicultural Library News

The most important development which has occurred in the beekeeping world for many years is the establishment of large libraries in America, entirely on the subject of beekeeping. There have existed many fallacies in American beekeeping literature, the truth of which has more or less been well known in the Old World for many years. In practical bee culture, American beekeepers are way beyond those in the Old World. But in the fundamental knowledge of bee behavior, the important factor in successful beekeeping, we are woefully behind. For instance, in the case of control of American foulbrood, the fundamentals of our present treatment were published in a European book as early as 1774.

The many books and journals published in European countries have helped to give beekeeping a background in that part of the world, which has previously not existed in America.

At the present time the library at the University of Wisconsin has over 2000 volumes of bee journals and 1500 books and pamphlets on beekeeping. These have been catalogued, complete volumes of bee journals have been bound and are available for use whenever called for. This constitutes one of the largest collections of bee literature anywhere in existence. Because of a lack of information concerning European libraries, it is not possible to say this is the largest collection, but it is the largest collection of literature of which I am able to gather any information.

Probably the most important feature of these libraries is the opportunity which they give for research, as no student can make a thorough investigation of any problem without a reasonably large part of the literature being available.

Altogether, approximately 300 distinct journals dealing with the subject of beekeeping have been active at one time or another. Some of these were of little importance and ran for only a few issues; others have run for a period of over seventy-five years. Seventy of these journals have been published in the U. S. Of these, ten or eleven are now active. The largest number are from Germany. There are now about 150 active bee journals being published regularly.

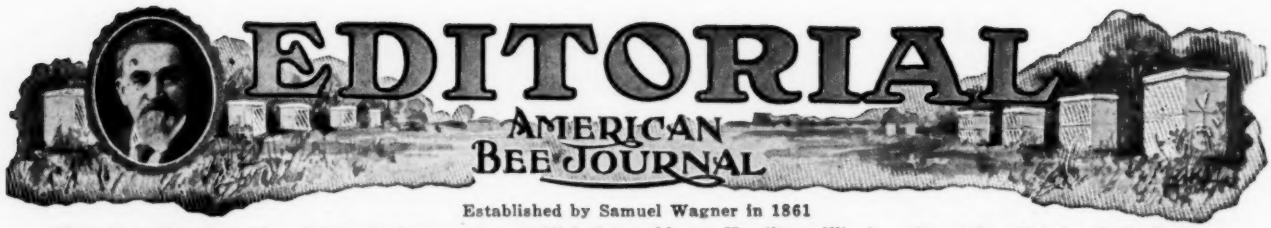
The American Bee Journal, at Hamilton, Illinois, probably has the finest collection of American beekeeping literature in existence.

The Charles C. Miller Memorial Apicultural Library contains the finest collection of Belgian beekeeping literature in any library.

H. F. Wilson, Custodian.

China Awake

The mayor of Peking, Mr. Li, has issued a pamphlet urging the cultivation of honeybees. The pamphlet is entitled, "America's doing it. Why can't we?" The Chinese, it seems, are becoming more and more interested in the cultivation of bees.



Established by Samuel Wagner in 1861

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The Granulation of Honey

The people need to be educated upon honey, if the consumption is to be as great as it ought to be. There would be much more demand than production if every consumer was informed on the purity of honey. The evidence is found in the fact that the beekeeper who lives next to a well traveled public road, where the traveling public can see the hives, finds ready sale for his honey. The passer-by sees the bees. This induces him to believe that the honey offered for sale there is pure. He buys, although he would probably never think of buying from a grocer, for fear that the product he bought be adulterated.

One of the greatest obstacles to the sale of honey is the ignorance of the American public of the fact that extracted honey granulates when the weather becomes cool, if the honey is pure and ripe. The public believes exactly the reverse, and this belief is due to the beekeeper being ashamed of his honey when it granulates. He does not have enough interest in his own success to tell the consumer that pure honey granulates in cold weather. Some beekeepers are even convinced that it is impossible to inform the public of the correct facts. Yet this has been done in many other countries. In most countries of the European continent honey must be granulated to find sale. In Canada even, most sales are of honey after granulation.

The editor lately received a letter from Mr. E. R. Root, of Medina, Ohio, who is on lecture trips in the East. Mr. Root writes:

"If you were with me on this lecture trip, you would see, as I do, that almost all the women believe that honey is manufactured or adulterated. There are two things to account for this: poor honey that never ought to be put up in bottles as a table honey and that bugaboo of granulation. In New York the heresy is most prevalent."

Since we all know that honey, left to itself, will granulate in cold weather, that the granulation of it is one of the best proofs of purity, it behooves us to make mention of it to all our customers. Some imagine that the customers cannot be convinced. But they can, and the proof of it is in the fact that, in many countries, people have become so accustomed to the granulation of honey that they mistrust honey that is not granulated when the weather has turned cold. Not only is the granulation an evidence of purity, but it is also a proof that the honey is fully ripened. Instructions for liquefying it should be given at the time of sale.

A very good evidence of the desirability of granulation is given in the July number of "L'Apiculture Rationelle" of Belgium, which has just reached our desk. It says, page 164:

"In order that it may granulate more finely, it is necessary to whip it, occasionally, with a wooden beater."

Many people expect to keep their honey from granulating by heating it. It is often heated too much and the flavor damaged. In other cases, where it has been slightly heated, it granulates nevertheless, and the customer who mistrusts granulation is easily convinced that the honey is impure. Since honey will continue to granulate, whenever it is of good quality, we cannot afford to leave the consumer in ignorance of the fact.

If we can satisfy our customers that our honey is absolutely the pure nectar of the flowers, there will be no end to the sale of it.

The Pap of the Nurses

For some time it has been known that the pap given to the brood in the early days of its life and the royal jelly fed to the larvæ of the queens during their entire development are the same. It is even advanced that the food given to the laying queen by the workers is mainly, if not altogether, this pap. But there has been disagreement all along on the origin of this food. Schiemenz, Cheshire and others held that it is produced by the pharyngeal or salivary glands existing in the head of young worker bees, while Schonfeld, Cook, Cowan and others held that it is produced in the stomach, as chyle, or in a similar way.

Here comes now a Slovak scientist, Dr. St. Soudek, with a report of experiments on this subject. His bulletin is issued from the Superior School of Agronomy of Brno (Brunn), in Cheko-Slovakia. The bulletin is in the Slovak language; but as Dr. Soudek has been a student at Cornell, he has added a summary in English, which is lucky for us, as the Slovak language is outside of our reach.

Dr. Soudek gives the results of experiments which indicate that the glands in question are heavily laden with a yellowish gray secretion shortly after the young bee's emergence, this secretion stopping after some twenty days, the cells producing it becoming atrophied. These experiments confirm the Schiemenz-Cheshire view of the gland production of the pap, which was accepted as the correct view by Langstroth and Charles Dadant. (Hive and Honey Bee, Par. 39-40.)

The bulletin in question contains sixty-four pages and three plates.

Poultrymen and Beekeepers

Mr. W. P. Fritz, of New Jersey, writes us to suggest that the beekeepers ought to cooperate with poultrymen to make exhibits together, as the two industries go well together.

We have seen the horticulturists and the beekeepers meet together, as well as with the nurserymen. They do so in Tennessee, every year. We believe it would be to the advantage of all those small branches of farming if they would unite for their conventions as well as for their exhibitions. But this must be taken up by the state organizations in each case.

The Sweet Clover Belt

The associate editor has recently visited the sweet clover region of northwestern Missouri, eastern Kansas and Nebraska. The spread of sweet clover in this region within recent years is surprising. In many neighborhoods where beekeeping was formerly very uncertain, good crops are now the rule. Farmers who formerly regarded sweet clover as a weed are now growing it in their fields and finding it the best legume available for renewing fertility in worn fields and holding the soil from washing on steep hillsides.

Elmer Kennedy, of Saint Edward, Nebraska, went to Colorado and engaged in beekeeping in that state for many years. On his return, a few years since, to his boyhood home, he found a better location than any he knew in the West.

The value of sweet clover for bee pasture was very evident on this trip. The dry weather had greatly injured the white Dutch clover in many places and beekeepers living where no sweet clover is within reach had little honey in sight. Those with good sweet clover pasture were all enthusiastic about the prospects and in many apiaries an average of 100 pounds of honey was already on the hives.

Farmers have only begun to appreciate the merits of sweet clover, and there is every indication that within ten to twenty years there will be many times the present acreage available. With more sweet clover, larger apiaries are the rule, and we may confidently look forward to the time when the sweet clover belt of the Middle West will be the greatest honey producing section in the world. With the general planting of sweet clover on the farms of this wide expanse of fertile country, the available bee pasture bids fair soon to be unlimited.

The indications are that production will be limited only by the markets available, and the time is near at hand when an organized effort will be necessary to market the output at profitable prices.

Strong Colonies

The bulletin of the Society of Apiculture of Alpes-Maritimes, France, edited by our old friend Baldensperger, always contains interesting matters. Its May-June number of 1927 gives a description of a number of apiarian excursions in France. One of the trips was to the apiaries of William Wilson, in the province of Gatinais. Mr. Wilson, a Scotchman, who is associated with a Mr. Benton, will be remembered by our readers as the man who gave such praise to the sainfoin, in our Journal, and was kind enough to send seed to a number of our beekeepers for trial.

Messrs. Wilson and Benton are doing beekeeping on a very large scale and take all possible advantage of the honey harvest of the sainfoin. In order to strengthen their colonies in movable frames, for the crop, they buy, at low prices, from the Dordogne, colonies in skeps or **bournacs**, which they are able to secure easily. One of these bournacs is established in close proximity to each movable frame hive. When the crop begins, each of the bournacs is moved to a distance of about 150 feet in the rear. This throws the entire working force of the bournac into the hive near which it was located, increasing its active population in great degree. When this is done at the time of the crop, not a single bee is sacrified and the enthusiasm of the colonies for a large crop is very clearly increased. Mr. Wilson is a hustler and manipulates some 2,000 colonies of bees, if we are correctly informed.

Slavic Beekeepers

The beekeepers' associations of "All Slavic" countries had a convention in Prague July 3 to 10. If it were not for the distance and the difficulties of language, we should like to attend such a meeting, to get an idea of the progressive beekeeping of central Europe.

What Others Are Doing

Every nation is apt to consider itself the leader in every progress. Probably few have made as active progress as the U. S. But we see in Belgium something extraordinary in beekeeping. We have under our eyes the announcement of an International Exposition of Beekeeping for the Province of Namur, to be held from August 27 to September 6.

This organization has, among its executive committee, the presidents and secretaries of forty-two different apiarian sections in the Province of Namur, and eleven teachers of apiculture in the same district.

The prizes offered number eighty-eight and the amount offered totals 13,750 francs, with thirty medals of gold, silver and bronze, to be awarded by the jury.

Talks on beekeeping will be given, during the exposition, by thirty-four different writers, teachers and speakers in beekeeping.

When we consider that a fair of this kind is organized by a province which measures only about thirty-five by fifty miles, with a population of some 300,000, we can readily perceive how much importance these people give to beekeeping.

Requeening

A very good time to requeen, in localities that have two distinct crops of honey, is after the first crop, at the beginning of the second crop, when the bees which would hatch from eggs laid then would be too late for field workers for the second crop, but those reared a little later in the season will make good population for the opening of winter. Queens that have worn themselves, laying heavily during the entire season from the opening of spring, may be replaced then with benefit, for the following year. We are doing this during the present season. I have never been in favor of replacing queens every year, as I believe their best laying season is their second one. But at the end of this second season their prolificness is often impaired by the excessive laying of the active months. That is the proper time to replace them. This must be done with choice stock, so as to at least sustain the vigor of the apiary.

Good Summer Meetings

About 125 beekeepers attended the Heart of America summer meeting at the home of X. J. Kennedy at Lawrence, Kansas, on July 3, and a similar number were present at the interstate meeting at Omaha and Council Bluffs on July 12 and 13. Reports of these meetings came too late for this issue of the Journal, which was already in type. Such an attendance at meetings held during the honeyflow indicates real enthusiasm among the members of the craft.

The Acarapis of the Bee

Dr. Morgenthaler, of Switzerland, now holds that there are two varieties of the Acarapis, the Acarapis woodi, which invades the trachea of the bees, and an acarapis which lives on the outside of the body and which he calls, for that reason, "Acarapis externus." He has found these where there were none of the other kind within the body of the bees. He reports slight differences in them.

The Floods

We fully agree with the Mississippi Valley Association that it is imperative for Congress to **"energetically undertake and carry to a speedy conclusion effective measures for permanent control of the Mississippi River and all its tributaries."** This is a matter which concerns the entire nation. Write to your representatives and senators in Congress to urge prompt attention to the matter.

The Whys and Wherefores of Robbing

By H. E. Coffey

WRITING of the worker bee, **abeja trabajadora,** my Spanish-speaking neighbors call them, Mr. W. Broughton Carr says: "We cannot claim for it the virtue of strict honesty with regard to the stranger, but for its own, "kith and kin," it is a model of socialism in an ideal form, possessing nothing of its own, yet toiling unceasingly for the good of all." (Encyclopædia Britannica.)

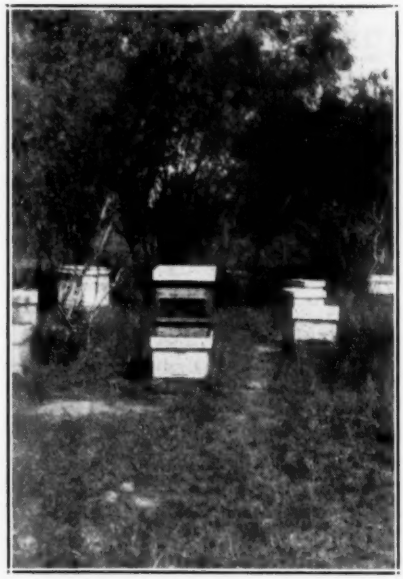
Mr. Carr has had over forty years of practical experience in apiculture. He has served as associate editor of both the British Bee Journal and the Beekeepers' Record, and his words are not to be taken lightly. I have no objection to his statement, **ut su pra,** if it be applied as a metaphor, but I differ with anyone who attributes to our domesticated insects the attribute of virtue, or any other of those characteristics belonging solely to the genus **Homo.**

The life within the bee colony is wonderful when we come to know something of it through study and investigation, but after all bees are insects and governed wholly by instinct. In no phase of bee activity is this more clearly shown than during a robbing furor, when our nectar helots turn brigands and rush in "where angels fear to tread." Madly they will drop into an open vessel of honey or rush into any other place, regardless of danger, having the odor of coveted sweets. Reason would instill in them the element of caution even though more desirable traits of character were lacking.

Bees refuse to rob during a honey-flow, and though tempting frames of honey be exposed for hours in the apiary, rarely will a single bee notice them. It is during the nectar dearth, as we all know, that robbing is to be expected. If we could so arrange floral conditions within the range of our bees that there would be a continuous flow from spring to autumn frost, the robbing mania would never make its appearance; but this is impossible. The most that any of us can do is to ascertain the cause, or causes (the whys) of this undesirable trait which asserts itself among our insect charges, and apply the preventatives or cures — the wherefores, they might be termed— which come from knowledge and experience.

My beekeeping brethren, I am sure, will agree with me in this: that if conditions in the bee range area of an apiary are kept under perfect control there will be no robbing. Bees rob only when stimulated by circumstances outside their own hive. Honey is practically always the agency which prompts the robbing fever.

Some beekeepers may yet follow Alexander's plan of taking off surplus honey during the honeyflow, but the vast majority of us go about this work at some time after the flow is over. This is a time when bees are stimulated to rob. When we begin operations perhaps no robber bees are present. As we continue work a few robbers appear and follow us



Device over hive to trap robbers

from hive to hive. As they gain a taste from exposed combs and drippings of honey from the supers their numbers increase. We may be careless and drop a few pieces of burr-combs containing honey, which the robbers quickly find. Perhaps some bees may get into our honey house and find their way out through a bee escape, their honey sacs filled with loot. In these and many other ways bees are stimulated to rob at harvest time; but it is possible to obviate the robbing nuisance at such times.

In this connection the bee escape, properly used, is of great assistance. It will clean the supers of all but a few straggling bees, provided the queen and all brood are below. Brood in the extracting supers at harvest time may be avoided by a proper use of the queen excluder. This statement applies to eight- and ten-frame standard hives. With the fifty modified Dadant hives which I operate I find that the excluder is not needed, as queens rarely ever go into the supers of these hives to lay. The beekeeper should take especial care to close all openings through which bees might pass to or from the supers above the escape board. Europeans use cow dung mixed with clay for closing such openings. This or something else which will serve the same purpose should be used, for honey left unguarded above the escapes will most surely be found by robbers, and these will "make quick work of it" in a short while.

The apiarist may further avoid robbing by taking off the supers of honey in early morning, before the bees are active, and again late in the evening. Supers of wet combs should always be returned to the colonies in the evening twilight if possible. If this is done, they will be cleaned during the night and there will be no disturbance in the apiary. Under no circumstances would I advocate the placing of supers of wet combs in the open for bees to clean up, as is the practice of some in the North. I have never known of any southern producer making this a practice, though there may be some who do.

At any time of the year some of our colonies may die from some cause or other. None of us ever become so proficient that we can forestall the death of every colony. If there be any honey in the combs of the deceased, some prowling bee is sure to find it and start the whole apiary on the rampage. All weak colonies which do not have their entrances properly contracted are susceptable to being robbed. A hive which is hopelessly queenless, even though it be strong in numbers, will put up only a half-hearted defense and may possibly be robbed. It behooves us, then, to make examinations of our apiaries at sufficiently frequent intervals to discover any dead or defenseless colonies before some robber does, and to keep all colonies at normalcy.

The queen breeder, perhaps more than anyone else, realizes the importance of avoiding robbing in the apiary. He finds it necessary to make colony manipulations and examine nuclei daily, and the presence of robbers may make working conditions intolerable. Where robbers become troublesome, some find it necessary to work in the hotter part of the day, when the robbers are listless and inactive. It is in the early morning hours of summer that robbers begin work with most energy. If weak colonies and nuclei have their

entrances so arranged that the morning rays of the sun strike them, they will be up early and on the defense. It is those nuclei which have their entrances shaded that are most frequently robbed. It is well to have the bottom boards of nuclei hives provided with a screen wire ventilator, so that when necessary the entrance may be closed entirely against robbers. A robber tent is of some advantage in making colony manipulations where robbers are present, but it is quite an impediment to rapid work. A robber trap, such as the one shown in the illustration, should be placed in every apiary where one must carry on operations after the honeyflow. The one which I use is made of two shallow supers which are separated by about twelve inches of space. A screen wire cone in each end admits robber bees to the inside. A frame of old comb partly filled with honey is used as bait. The trapped robbers may be taken to an outapiary and united with some weak colony.

If the entrance of a colony containing a large number of bees is contracted because it is being robbed, there is danger of suffocation in hot weather. Especially is there danger where the entrance is contracted to a single bee space. The throwing of straw and weeds over the entrance is often advocated. The plan I think best is to place a shallow super, without frames, but with a screen wire bottom, between the bottom board and hive body of the colony which is being robbed. Under some conditions it may be advisable to place another such super on top of the hive after the cover has been removed, with screen wire up. Ample shade should be provided. Great care should be taken to see that no openings are left through which bees may pass either in or out of the colony. After a confinement of forty-eight hours, the colony may then have the specially constructed supers removed late in the evening. The robbers which have been confined will not be killed, as some would expect, but will become domiciled in their new surroundings and add strength to the very colony they were so intent on despoiling two days before. This in itself shows that bees do not possess the faculty of reason, for when released they are at full liberty to return to their former homes.

Honey should never be used as a feed where any type of entrance or bottom board feeder is used. With proper precautions honey may be fed safely in the friction-top pail or in the division board feeder with a float. I advise against the use of honey in feeding weak colonies, regardless of the type of feeder used. Because of the risk of getting robbing started, it is always best to use sugar syrup for feed. This syrup is odorless and will not stimulate robbing.

From the correspondence and talks I have had with other beekeepers, as well as from my own observations, I am confident that some strains of bees are more inclined to rob than are others. At times it seems that one or two colonies in the apiary are doing most of the robbing. It is often the most industrious and best honey producers which send out the most robbers. Some might expect the most populous colonies to proportionally contribute the most robber bees, but this is not always true. I am inclined to the belief that we may, by selective breeding, produce a strain of bees less inclined to rob than anything we now have, but I do not think it possible to entirely eliminate this instinct. The effect of such breeding on the productivity of the strain produced is questionable. At any rate we should not set our goal for one desirable trait without at the same time striving for all the other essentials which a profitable strain of bees must possess.

There is one important source of the robbing stimulus and an important source of the spread of bee disease as well, which is often overlooked. This is the honey which bees find in containers thrown away by the housewife. Bees are sure to find all such honey if it is in their range. Some educational work among the housewives living in our bee range might be of help.

White Clover vs. Sweet Clover

Mr. Newman I. Lyle, of Sheldon, Iowa, formerly with the Iowa State College at Ames as extension instructor in beekeeping, writes under date of June 11 that bees in Sheldon are just between the dandelion and clover and are practically standing still as to honey production. He states also that he thinks there will be only a light crop of white clover because of the three poor years preceding. But when he turns to sweet clover he says that all he wishes is for his bees to keep up breeding until the sweet clover starts; then, "O boy! twice the acreage ever before, and then next year again double."

This looks like another indication that sweet clover is moving around through the United States faster and faster and more thoroughly.

Crop Conditions In Arizona

The crop within a radius of 100 miles from this place is very spotted. Six of my eight yards have done well and the other two will not average more than thirty pounds per colony. Other beekeepers are reporting scarcely no crop. If the whole state turns out this way, the crop will be nothing like as large as it was last year.

W. C. Collier, Tucson, Ariz.

Wax and Honey from Building

When the Hatch Cash and Carry Grocery Company removed from the Peterson Building at McGregor, Iowa, the building was purchased by L. P. Bickel. Mr. Bickel immediately set about to remodel the store and fit it up for a place of business again. As a part of the work of remodeling, the old floor was to be removed and a new one put in. When the carpenters began to tear up the old floor they broke right into a regular beehive, and the picture shows what the results were.

Making Honey Vinegar

By H. E. Weisner

FROM the number of inquiries in the bee journals regarding the making of honey vinegar, it seems that many beekeepers would like to make it if they knew how to go about it properly, and the writer's experience leads him to believe that very few of those who attempt it make anything like a success of it, with fewer still making really good vinegar.

The principal reason for the many failures seems to be that the directions usually given are too simple—that is, there is much more to it than merely diluting honey to a certain degree and letting nature take its course.

For much of the material in this article I am indebted to several authorities, among whom are: Russell H. Kelty, Gleanings in Bee Culture, November, 1920, page 659; Dr. E. A. Vinson, in Timely Hints for Farmers, University of Arizona, and Zae Northrup Wyant, in Special Bulletin No. 98, Michigan Agricultural College.

In the manufacture of honey vinegar there are several factors to be carefully observed, the disregard of any one of which means failure or an inferior product. It is not so easily made as cider vinegar, but when made properly is far better.

The first thing to be considered is a suitable container. This may be of glass, earthenware or wood, depending upon the amount to be made, but in most cases barrels will best serve the purpose, and they should be selected with great care, for the slightest taint in the wood will surely be very noticeable in the vinegar, perhaps spoiling it altogether.

Only hardwood barrels are fit for this purpose, and those previously used for vinegar or alcohol are best of all. Resinous woods (those containing pitch) are not at all fit for use in the manufacture of vinegar, although barrels made of Douglas fir, heavily coated inside with paraffine, are much used in the West for storing and transporting the finished product.

In preparing the barrel for use it should be sterilized. This may be effected by pouring in several gallons of boiling water and then rolling and tipping the barrel about, or live steam may be turned into it until the wood is thoroughly heated. I have often used the uncapping knife steam generator for steaming barrels with very satisfactory results, although it requires an hour or more to do the job with so small a boiler.

In the process of vinegar making there are two distinct and separate chemical actions, the first being the alcoholic fermentation, changing the sugar content of the liquid to alcohol; the second is the acetification, changing the alcohol to acetic acid. As acetic acid acts as a poison to the yeast cells which change sugar to alcohol, it is best to take extra precautions in the preparation of a used vinegar barrel by filling it with water and allowing it to stand for a few days in order to reduce the strength of the vinegar contained in the wood, after which it should be sterilized.

Common yeast may be used to start the alcoholic fermentation, but it is best to procure a culture that has been developed especially for this purpose. These cultures may be obtained of the Colorado Experiment Station, Fort Collins, Colo., or of the Michigan Agricultural College, East Lansing, Mich. Perhaps it will be best to state here that if you wish to make vinegar legally, in a commercial volume at least, it will be necessary for you to obtain a federal permit from the Department of the Treasury. As to the making of it for use within the home without having a permit, there seems to be a difference of opinions, but mine is that, according to a strict interpretation of the law, a permit is necessary in any case.

The experiment stations make a charge of 25 cents each (stamps not acceptable) for the cultures, but any number may be propagated from the one thus obtained, so that it is not necessary to procure more than one culture at a time, even though several barrels of honey water are to be fermented at the same time. Full directions are sent with each culture, but it may be as well to give them here:

"Prepare the starter at least one week before it is to be used. For each barrel of cider prepare a two-quart Mason jar as follows:

"1. Wash thoroughly, cover with cold water in a suitable vessel and boil five minutes.

"2. Cut a piece of clean muslin or several thicknesses of cheese cloth large enough to tie over the top of the jar and iron with a very hot iron, or wrap it in paper and bake it in a very hot oven until slightly scorched (in either case).

"3. Remove the jar, fill half full with boiling sweet cider, cover immediately with the freshly sterilized cloth (handling the cloth by the extreme edge only) and let the contents cool."

(No. 4 tells how to prepare a substitute for cider, but instead of cider we use honey solution in the same way, mixing one part honey to eight parts water. It should be sterilized by boiling, just as in the use of cider.)

"5. Shake thoroughly the culture bottle labeled 'Vinegar Yeast,' thoroughly flame the mouth and cork by rotating them in the flame of a match, or of an oil lamp.

"6. Using a corkscrew, remove the flamed cork, being careful **not to touch the mouth** of the bottle with the fingers. These precautions are necessary to prevent contamination of the pure culture.

"7. Carefully lift the cloth cover of the jar, pour the contents of the vinegar yeast bottle into it, and again cover the jar, this time tying on the cloth."

Keep the jar at a temperature not lower than 75° F., shaking occasionally with a rotary motion (somewhat like the turning of a horizontal crank), being careful **not** to soil the cloth cover with the fermenting liquid, as contamination may result. I have divided the contents of one small bottle of culture among several jars of solution, with very satisfactory results, although the yeast does not ripen quite so quickly in such cases, of course. These precautions may seem superfluous, but it is important to be very careful at this stage of the process. One small bottle of the culture is enough to inoculate several jars of the liquid, and by taking proper precautions the culture may be continued indefinitely.

When the jar of culture reaches the stage of vigorous foaming it is "ripe" and ready to be added to the barrel of honey solution. It requires from three days to a week to ripen, depending upon the temperature and the condition of the starter.

As the honey solution is lacking in some of the elements to make it a well balanced yeast food, there will be left some unfermented sugar at the end of the fermentation unless these be added. This unfermented sugar not only sweetens the vinegar to some extent, making it seem weaker than it really is, but it is my belief that it promotes the growth of certain harmful microorganisms, which will be discussed later. The elements referred to above are best supplied in the form of chemical salts, and here are given the formulas recommended by two authorities:

By the Michigan Agricultural College:

Strained or extracted honey, 40 to 45 pounds.
Water, 30 gallons.
Potassium tartrate, 2 ounces.
Ammonia phosphate, 2 ounces.

By the University of Arizona:

Strained or extracted honey, 40 to 45 pounds.
Water, 30 gallons.
Ammonium chloride, 4 ounces.
Potassium bicarbonate, 2 ounces.
Sodium phosphate, 2 ounces.

The writer has used each of these formulas and there was no apparent difference in the results obtained. The salts in the latter formula are much more readily obtained from druggists than the former. The experiment stations can supply them, also.

If the honey has been unduly exposed to contamination or has begun to ferment, it will be necessary to boil it in order to eliminate ferments that would be very detrimental, especially that of fermenting honey, as the ferment of sour honey is entirely different from a true yeast ferment.

The mixing of the solution is best accomplished in a honey tank or extractor, and at least part of the water should be heated in order to thin the honey more readily and to bring the solution to the proper temperature. If the mixing is done in the barrel, extra care should be taken lest some of the honey should settle to the bottom.

When the honey and water have been well mixed, draw off a quart or so and dissolve the salts in this; then fill the barrel about half full, add yeast and salts, finally pouring in the balance of the solution, thus mixing all thoroughly. Although some authorities advise filling the barrel not more than two-thirds full, I have many times had forty gallons fermenting in a fifty-gallon barrel without causing any trouble.

As soon as the solution has been poured into the barrel it should be tightly bunged. Then a hole large enough to admit a small rubber tube should be bored through the bung and the tube inserted so that the inner end is just past the bung. It may be necessary to seal around the bung and tube with wax in order to make them gas tight. The outer end of the tube is then placed in a glass of water, and in a day or so gas begins to escape through the tube; soon after, bubbling in an almost steady stream. This arrangement is necessary to protect the liquid from any chance of contamination and to reduce the escape of alcohol to a minimum.

The active period of alcoholic fermentation usually lasts from ten to thirty days, depending upon the temperature, and other influences that I have not always been able to ascertain.

Fermentation will go on at comparatively low temperatures, even below 60° F., but at less than 70° the process is very slow, and best results are obtained when the barrel is kept in a temperature of from 77° to 86°.

The liquor should not be disturbed for at least a week after all signs of fermentation have ceased. Next comes the most difficult part of vinegar making—that of acetification, for it is during this stage that most of the failures occur. Dr. Vinson told the writer that time after time he had had a batch of vinegar nicely started and as strong in acid as 1 per cent or more, when some off ferment would attack it and totally ruin it in a short time. However, he carried on his experiments entirely in the laboratory rooms above ground, where there was considerable variation in temperature and where it often became too warm. Then, the presence of various other cultures near by may have had a detrimental influence upon the vinegar. Most of my difficulties were in getting acetification started, for almost invariably a white film of mold, caused by a micro-organism known as **Mycoderma vini**, quickly formed upon the surface of the liquid, completely insulating it from the air, thus preventing the growth of mother of vinegar.

I finally overcame this difficulty by bunging the barrel tightly after mixing a small quantity of fresh unfinished vinegar with the alcoholic stock and leaving it thus for two weeks or so, when, upon removing the bung, there would be seen the glistening film of mother of vinegar.

Evidently, the microorganisms causing the mold require a great deal of air for their propagation, while those that form the "mother" require comparatively little. Once this gelatinous film covers the surface of the liquid, the bung should be removed and a fine mesh cloth fastened closely over the hole in order to exclude insects.

The method of acetification that has given me best results is as follows:

After allowing the fermented liquor to settle well it is siphoned out of the barrel, care being taken that the dregs at the bottom are not disturbed. It is then transferred to another barrel that has been well sterilized, and from 10 to 25 per cent of strong unfinished vinegar added. During this stage the barrels are lying on the side so as to expose as much of the surface of the liquid to the air as possible, and they are not filled more than two-thirds full. A sterilized stick of wood is suspended by a string through the bunghole so that it floats upon the liquid, but draws the string taut. This arrangement prevents the film of mother from sinking, as it is apt to do if not supported in the center.

The barrel is then bunged tightly and left so for two weeks, as described above. Some authorities advise boring a hole at each end of the barrel in order to augment the air supply, but it is doubtful if this is really good practice anywhere, and it certainly is not in a dry, hot climate like this, for it would permit too much evaporation.

The time necessary for complete acetification depends upon the amount and strength of the fresh unfinished vinegar added to the alcoholic stock and the temperature in which it is kept. With an addition of 25 per cent of strong unfinished vinegar and in a temperature of from 70 to 86 degrees Fahrenheit it will reach practical completion in about three months, and as soon as this stage is reached it should be drawn off and sterilized and stored in a sterilized airtight container, because once the acetification reaches completion deterioration begins, and if sterilization is not resorted to the vinegar will eventually spoil. Sterilization may be accomplished by heating the vinegar in good unchipped, uncracked enamelware vessels to a temperature of 140° F. Never allow vinegar to come into contact with metal.

After being heated, the vinegar will be slightly murky, but it will eventually become clear and sparkling by settling.

Sometimes vinegar acquires a dark tinge that progresses very rapidly. If it is certain that this trouble is not due to its having come into contact with iron or other metal, it is most likely due to what is scientifically known as an **oxidase**, which causes the vinegar to turn black upon its exposure to the air. The remedy for this trouble is to add from two to five ounces of potassium metabisulfite per thousand gallons of vinegar. In my experience, a heaping teaspoonful per fifty-gallon barrel did the work very well, and as this is a harmless salt there is no objection to its use.

There are also some animal parasites that sometimes cause more or less trouble and whose presence is always objectionable. The principal one of these is perhaps the vinegar eel, an exceedingly tiny worm of the nematode order. These animalcules might often be mistaken for fine, short pieces of lint were it not for the fact that they are generally very much alive and squirm and wiggle very much like so many tadpoles. It is very difficult to see them unless

some of the vinegar be placed in a small bottle or glass tube and held towards the light. They thrive in alcoholic solutions of the strength used for vinegar making as well as in vinegar of considerable strength. These pests not only weaken the solution by feeding upon it, but retard acetification by interfering with the acetic ferment, as both the eels and the ferment that converts alcohol into acetic acid must have contact with the air in order to thrive. Also, if the eels become very numerous their dead bodies may totally ruin the vinegar through their putrefaction. It was formerly believed that eels were a necessary adjunct to the making of good vinegar, but, like with many other time-honored beliefs, science has rudely shattered it. Sources of contamination by these pests are usually second-hand vinegar barrels and river or surface water. The means of prevention are sterilized barrels and a pure water supply.

In warm weather—and this applies with particular force to this part of the country—vinegar flies become a great nuisance unless care is taken to exclude them from the liquid and to prevent leakage or spilling that will furnish them a breeding place for their larvæ, which are most disgusting when seen in the barrels.

Another parasite, with which the writer has had no experience, but which is said to be troublesome, is the vinegar mite. Of these, one authority says: "Vinegar mites are tiny animals belonging to the spider family. They often accumulate in moist places around the vinegar barrels and may even enter them, spoiling the vinegar if they are numerous. They can be destroyed easily with hot water and prevented from entering the casks by painting a ring of turpentine or kerosene oil around the openings."

The color of the finished vinegar is usually lighter than that of the honey used, so that any shade from water white to amber may be made, but it seems that most people are so accustomed to the color of cider vinegar that any other shade is looked upon with disfavor, so that the darker product sells more readily than the lighter.

Vinegar made according to these directions should attain an acidity of from 7 to 8 per cent of acetic acid, but as the strength needs to be only 4 per cent in order to comply with the law, it may be considerably diluted. Most of the state experiment stations can determine the strength of vinegar, and will test samples free of charge.

Where daily temperatures of 90 degrees or more continue for weeks, it is important that vinegar making be carried on underground or in buildings where the temperature can be regulated, because these high temperatures not only cause a rapid evaporation of alcohol and acid, but greatly increase the danger of spoilage through the development of molds and harmful ferments. Much variation in the temperature is also very detrimental, so it will be seen that it is very poor practice to expose the liquid to outdoor temperatures in almost any climate. Drafts of air are harmful to the process of acetic fermentation and should be prevented during this stage.

As to the probable profits in making vinegar from honey, much depends upon locality and salesmanship. Throughout much of the intermountain region of the United States vinegar must be shipped in from a great distance or made up from concentrated acid, which makes the fruit juice product high priced. It also happens that in this same region honey has the lowest basic value for the same reason that fruit vinegar is expensive—that is, it must be shipped a great distance to reach a market, so it follows that vinegar can be produced from honey at a lower price than cider vinegar costs.

The expense and difficulty of obtaining suitable barrels, however, is a considerable handicap to one who attempts to make it in commercial quantities, and it is my opinion that anyone who endeavors to manufacture vinegar on such a scale will do better to install generators, thus enabling him to employ the modern, quick process.

In conclusion, a brief summary may not be out of place:

Do not use tainted barrels or barrels made of soft wood.

Be thorough in sterilizing.

Use yeast that is especially adapted to this purpose if it is obtainable.

Do not use a "Coca Cola" barrel unless you are willing to have vinegar of that flavor.

Do not expect to produce vinegar in a hurry without adding a lot of fresh unfinished vinegar to the alcoholic stock.

Do not expose the stock to the open air at the beginning of the acetic ferment, but keep the barrel tightly bunged after the addition of the acetic starter, until a film of mother appears on the surface of the liquid; then allow free contact with the air.

Better make a small quantity of vinegar first, in order to give a larger quantity a good start. No time will be lost by this.

Arizona.

An Initial Outbreak of Foulbrood

By Dr. J. H. Merrill

IT is fully as interesting, and often more instructive, to be present at the beginning of an event rather than at its climax. This is particularly true when an outbreak of foulbrood appears in a hitherto uninfected locality. The discovery of American foulbrood in a county in Kansas furnished such an opportunity.

Although the bees in that county had been inspected for foulbrood from time to time, no traces of this disease had ever been found. The beekeepers in this community were not only elated over this fact, but were boastful. But alas! it was only another case of pride going before a fall. An enterprising local grocer discovered that he could buy shipped-in honey cheaper than he could get it from the local beekeepers. The order was given and the honey later delivered to him in sixty-pound cans. It was then transferred to pint and quart Mason jars, and later used in a price-cutting honey sale. This in itself was unpatriotic and was bad business for the local beekeepers, but "the worst is yet to come."

The grocer, having no further use for the cans after emptying them, threw them out in his back yard, there to wait until such time as enough rubbish should accumulate to justify a trip to the city dump. Since all this happened late in the winter, the amount of nectar brought in by the bees from natural sources was negligible. While the cans remained behind the store there were days which were warm enough for bees to fly from the hives. The southerly winds which prevailed at that time carried the message northward to the bees that there were some cans behind a certain grocery store containing enough honey to make a visit worth while.

Within a hundred and fifty yards of that grocery store was located the finest apiary in the county. In this apiary the colonies were all strong, well packed for the winter, and had enough food in the hives to last until spring. The bees were not really obliged to avail themselves of the free lunch behind the grocery store. However, the distance to the store was short and it required but little time for the searcher bees to locate the cans and carry the news of their discovery back to the hives. Inasmuch as this was the best apiary in the county it follows that its owner must have been a careful beekeeper.

This fact was further evidenced when, on making his first spring examination, he found that American foulbrood was present.

A careful inspection of all the bees in the county was made immediately after this discovery. The inspection was made so soon after the discovery of the disease that no colonies had had time to die out. It is a matter of record that no colonies were found to have died from the disease. The foulbrood in this instance was spread from one common source of infection, and not, as is usually the case, by bees obtaining germs of the disease from robbing infected colonies. This fact offered an unusual opportunity to make a study of the initial spread of foulbrood in the community. After the inspection work was finished and the data were gathered together, some very interesting factors were apparent.

It has already been mentioned that the prevailing winds at the time when the cans were behind the store came from the south. As a consequence of this, although bees were located both to the north and the south of the grocery store, no traces of foulbrood were found to the south of the store. Was this because the south winds carried the honey odor northward and only the bees in that part of the town were aware of it?

Colonies which were strong in bees, but low in stores, were found to have the disease, while strong colonies which were well supplied with stores usually had a clean bill of health. Although it appeared several times as though the outside limits of the spread of the disease had been located, yet, if the next colonies examined were found to be low in stores, they were almost invariably diseased. Bees in such colonies would be more active and alert in their search for food than would the bees in colonies which were well supplied with stores. Colonies which were well insulated with packing, as well as those which were located in the shade, did not feel the warmth of the sun sufficiently to encourage any of their members to venture out; consequently, they too escaped the disease. This looks like another good argument in favor of winter packing and plenty of stores.

One infected apiary was found located two miles beyond any other diseased colonies. In itself this would seem to offset any previously held ideas in regard to the initial spread of an outbreak of foulbrood. The explanation, however, is very simple. The apiary was located directly across the street from a country schoolhouse. The scholars of that school usually carried their lunches with them, and on pleasant days these would be eaten outdoors. Any bread and honey sandwiches not eaten by the children would be thrown out for the birds and bees. In apiary inspection work in localities where foulbrood exists the disease is usually found in all apiaries near schoolhouses. While it may be contrary to the ethics of honey advertising to even hint that a child could possibly have more bread and honey than it could eat, it must be remembered that these were Kansas school children and it takes a pretty lusty appetite to eat up all the goodies that make up such a lunch box.

There was no used bee equipment brought into the county during that winter, neither did any bees come in on combs. The shipped-in honey was the only possible source of infection.

These observations are offered here because they throw an interesting light on how foulbrood may become established in a community before it reaches the point where it is spread by bees which have robbed out diseased colonies.

Italian Beekeeping

We are in receipt of the April number of the "Rivista D'Italia E D'America" (Italy Pan-American Review), in which we find an article on progressive beekeeping contributed by Signor G. Montagano, whose photo was published in the American Bee Journal, page 443, September, 1926. Professor Montagano is the author of several works on beekeeping, and lives in Rome, where the above mentioned Review has its headquarters.

British Imports of Honey Increasing

From a total importation amounting to 2,788,128 pounds of honey in 1921, British purchases of this product have increased to 8,960,000 pounds in 1925 (the latest year for which official statistics are available), according to Consular Clerk Alfred Nutting, London. Imports from the United States increased from 419,328 pounds in 1921 to 2,016,000 pounds in 1925.

Honey from the British West Indies is the chief competitor, New Zealand, Chile and Cuba being other important sources of supply. The following tabulation shows the relative wholesale prices of imported honey in London:

Kind	Per 112 pounds
California	$12.17 to $15.82
Jamaican	9.73 to 13.38
New Zealand	14.60 to 20.68
Australian	10.85 to 14.60
Cuban	9.73 to 12.78
West Indian	9.73 to 13.38

Strange Are the Ways of these Beekeepers

Should I or should I not cast slurs at the fellow who owns the above outfit? Shall we call it "apiary"? The picture doesn't show them, but there are dozens of old combs lying around slipshod in the grass and standing against the hives. The hives leak both bees and comb, and probably honey at times.

Much of the good results of inspection are cancelled by such outfits as this lying unsuspected, just around the corner. Beekeeping is such an emotional occupation. People are fired with interest as long as honey comes in with little trouble. Then a few lean years and we have the above result.

Honey Advertised Without Going on a "Space Drunk"

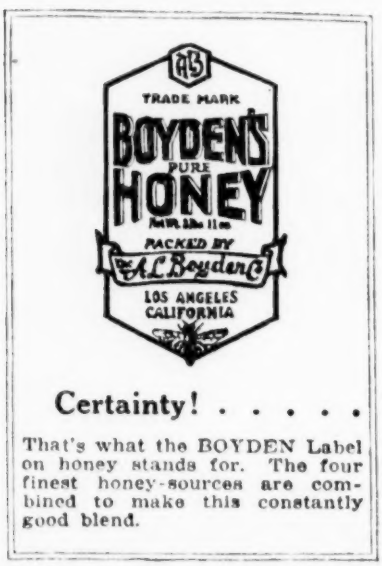
By Wallace Piper

SOME beekeepers and honey producers are doing newspaper advertising that keeps prospective consumers from forgetting them. And at the same time they are avoiding going on what one advertising authority has called "a space drunk."

Putting life into small space is the secret of the successful advertising by these honey producers.

Toast and Honey
We all know the nursery rhyme about—
"The queen was in the kitchen, eating Bread and honey"
Toasted Bread and honey, of course.
You will never know the delights of a perfect light luncheon, or afternoon tea, until you feast on crispy slices of hot buttered toast with generous helpings of thick, golden honey.
NU-DO BREAD
—is good in every form. You'll find it particularly delicious when made into toast—which possesses all the virtues of Bread—Best of All Foods.
Schafer Bakery
Incorporated
Savannah, Ga

Somebody had the right idea


TRADE MARK
BOYDEN'S
PURE
HONEY
PACKED BY
A. L. Boyden Co.
LOS ANGELES
CALIFORNIA
Certainty! . . . . .
That's what the BOYDEN Label on honey stands for. The four finest honey-sources are combined to make this constantly good blend.

The Boydens help sales by advertising

In the first place, the plan of not using large newspaper space unless you need it has the approval of wise advertising men. "Big space for its own sake is very trying," wrote one of them in Advertising Fortnightly. "Your retort at the end of a long day when you are big-spaced into listening to the roar of a page of 'smashing' advertising for Ajax axles is likely to be, in the ominous quaver of Opper's 'Peepul,' 'You—let—me—alone!'"

How big should the honey advertisement be? This recalls the oft-quoted query put to Abraham Lincoln as to how long a man's legs should be, and his reply, "Long enough to reach from his body to the ground." A honey advertisement should be big enough to carry the message the beekeeper or honey producer wants to deliver.

For one thing, if the space is not too large and is well laid out, it will be in effective contrast to so many ugly-looking advertisements. This tendency of big advertisers drew the comment of Frank Finney, president of a New York advertising agency:

"As it is today, certain newspapers are giant black smears of ugly-looking department store ads."

"If it is well laid out" needs to be repeated. While illustration and copy are important factors, it is the layout, together with the type arrangement, that appeals to the average reader. A good-looking advertisement has been declared to possess the same degree of attractiveness as an interesting, well executed picture or a fine piece of sculpture.

But how can you have a good-looking honey advertisement in a small space? There are some rules to be followed, but they are simple and common-sense ones.

Never crowd the space with type until there is no white space left with which to attract the eye. When you jam your space too full and have a solid mass, unrelieved by an illustration, or by white space, you scare the reader away to some easier-looking advertisement. It is just like turning your car off into a less traveled street rather than to fight your way through a traffic jam.

Even in the smaller advertisements there are several ways to get the valuable eye-attracting white space. Round illustrations naturally leave some. A margin of white space can be left at the left of the text; on both sides of it; at the top and bottom, between paragraphs; all around as a frame for the text and around the illustrations.

You need not strain for effects in borders. Some of the most effective borders are those made of simple lines which harmonize with the type and general appearance of the advertisement. Thus they call attention to what you have to say and do not become diverting ornaments. And, best of all, they are right there in the print shop, ready to use.

Another thing is the kind of type, but you have to be satisfied with

Beekist
PURE
HONEY
For a Well Balanced Diet
Eat HONEY
Everyone should take a little honey each day — especially children.
As a spread on bread — with cereals — as a sweetener in pastry, cakes or beverages—honey is not only delicious, but is also highly beneficial to the system.
Honey has valuable digestive and laxative properties—a perfect food, and an efficient regulator.
Begin to-day to include a little honey in your daily diet—and for Finest Quality insist on
Beekist
pure HONEY
Ontario Honey Producers Co-operative, Ltd., 47 Wellington St. East, Toronto 2, Ont.

Ontario is a mile ahead of us in her honey selling

what the paper has. However, you can kick against anything fancy. Tell the newspaper man you want a common type that is easy to read.

Also tell him to use capital letters only when absolutely necessary—not to set any of the displayed lines all in capital letters. Why? Because too many capitals, one after another, are hard to read—too many angles and not enough curves. The New York Tribune found that out in a long test to get headlines that could be read quickly and easily.

Now, if you are going to use a little space you cannot say much. Well, tabloid newspapers are succeeding. Their success was attributed by William B. Colver, in Editor and Publisher, to "brief and to-the-point writing. They are like clever people, who have something to say and say that something clearly and quickly. We admire the trait in people and court their society. There is no bore to compare with the long-winded person, however sincere he may be."

You will have no room for big words. That is all right, too. "Great reputations have been won by men who wrote simply and forcefully," said Paul Bloomingdale. "Robert Louis Stevenson, whose stories have entertained hundreds of thousands of readers over the civilized world, always used simple words."

When you use small space you can advertise more continuously, and the effect of seeing your message so frequently is cumulative; it's the repeated blows of the hammer that count.

Boys Drown Bees, Steal Honey

The following clipping from the "Arizona Gazette" was sent to us by Dr. Burt Ogburn, of Phoenix, Ariz.:

"Drowning bees for their honey is the newest crime to come to the attention of the county juvenile department.

"Walter T. Wilson, clerk of the Maricopa county Superior Court, reports that boys swimming in the Maricopa canal, which passes across his ranch on Twentieth street on East McDowell road, have drowned fifteen stands of bees in the canal in order to get the busy little workers' honey.

"For a time, Clerk Wilson didn't know where his beehives were going. He could see where the boxes were being dragged to the canal, but lost track of them there. Then a laborer in a nearby field saw a crowd of boy swimmers lasso a stand of bees with baling wire and pull the hive into the canal. After the bees were drowned the boys, ranging in age from 10 to 15 years, broke open the hive and got the honey.

"Mr. Wilson began an investigation and through the assistance of the officers of the juvenile department located eight boys who admit having a part in destroying fifteen stands of Mr. Wilson's bees for the honey. The boys will come before Judge Dudley W. Windes Saturday for correction. Mr. Wilson figures his loss to be around $150."

From Flood Region

June 12, 1927.

I want to express a word of commendation on the editor's views, more particularly as noted in his editorial in June number in regard to exaggerated reports of the flood. God knows it is bad enough without being enlarged upon.

It was a Mississippi flood that turned the tide of my life twenty-five years ago after having lost a start of about twenty-five or thirty colonies, when along came another flood and washed them away. I gave up and followed other means of living, to return again to my first love a few years ago.

This time I was fortunate in escaping actual overflow, although hemmed in on a narrow ridge. It is said Lake Providence is the only town in the valley between New Madrid, Missouri, and the Gulf to escape "wet feet" (may be another exaggerated report). We have a daily reminder of the Red Cross work in the village of tents within sight of our house. The narrow ridge mentioned above afforded camping ground for about twelve thousand refugees. Albert Vought.

A Good Word for Honey

Mr. O. Wold, of Minot, North Dakota, sends us a copy of a little paper, "The Old Fashioned Miller," in which a combination of all wheat bread, honey and milk is recommended as "containing all the elements necessary for growth, maintainance and health, in their proper proportions." Enough of this kind of advertising will take care of our surplus honey crop and create a demand which will insure prosperity to the industry.

Airline advertising is concentrated in single markets instead of being widespread. A good idea

Relationship of Queens to the Honey Crop

By J. C. Dods

I HAVE often noted how colonies of apparent equal strength would produce different quantities of honey, but never had the opportunity to make a careful check and comparison until last summer. I had no intention of making the test early in the spring, but as the colonies developed, I could not help but note the different characteristics and finally made a very careful study of cause and ultimate results.

On April 17, two three-pound packages were received from the South, with untested queens. The bees were bright three-banded Italians, and the queens looked fine. They were both set up side by side in new ten-frame Langstroth hives on full sheets of foundation. The day was warm, maximum temperature 84 degrees, but that afternoon there was a drop of 24 degrees in about an hour. Fruit trees, early shrub and cottonwoods were in full bloom. One quart of sugar syrup was fed to each package. The queens, in their shipping cages, were placed in each hive.

We will designate the colonies for future reference as No. 1 on the west and No. 2 on the east. As the No. 2 package was transferred, it was apparent that some of its bees drifted into No. 1, making that package the more populous. My suspicion was confirmed by the fact that No. 1 consumed their quart of syrup in the same time that it took No. 2 to consume half of theirs. They were both fed from time to time, and in every instance colony No. 1 consumed the most syrup.

The queens were released and accepted on the third day. Two days later I inspected the hives and found five combs drawn in No. 1 and three combs drawn in No. 2. This was nothing unusual, as No. 1 contained the most bees and, consuming the most syrup, should produce the most comb.

The queens began laying and the workers began to pile in the pollen and nectar from the early fruit bloom. It seemed no time before the middle combs were full of capped brood. It is wonderful to watch the building of a colony, step by step. Everything progresses in order until their new home is completed.

On May 5, or eighteen days after the bees were hived, they both had eight frames, each drawn and full of brood, new honey and pollen. It was here that I began to wonder why the stronger colony did not have the most frames drawn. Why did not No. 1 have ten frames instead of eight? On making a careful inspection something else was noted. Queen No. 2 laid in unbroken circles, filling the cells solid from bottom to top bars. Queen No. 1 skipped a cell here or there, in some places patches of five or six not filled. This inspection at once showed me that queen No. 2 was the best, and from there on I decided to make a careful comparison and note the results.

The following days both colonies built up very fast, all frames were drawn and filled with brood. However, No. 1 decided to raise some drones and they deliberately pulled out patches of worker-comb and transformed it into drone-comb. One frame in particular a space about as large as the palm of my hand was torn down and built up again with drone-cells. Needless to say, they built drone-cells all along the sides and bottom bars. On the other hand, I carelessly dropped a frame of capped brood from colony No. 2, tearing a gash about two by four inches in the side where it hit against the corner of the hive. I thought surely when they patched this they would rebuild drone-cells, but, to my surprise, after cleaning out the injured brood they rebuilt again with worker-cells.

About this time the hives were very populous and looked as though they could take a super. The white clover flow should be about two weeks off, so on May 24 I gave each a super filled with sections. No. 2 colony promptly drew out the foundation and began to store surplus honey. No. 1 colony could not be induced to enter the super, although the hive was packed with bees. On June 4 I gave No. 2 a second super. A little later than this we had our first dry spell; white clover was blooming, but giving no nectar. On June 19 No. 1 had the middle sections of super drawn, but no honey. No. 2 had all sections drawn and the first super heavy with honey, but not capped. Both colonies had very little honey in the brood nest. No. 2 had all frames solid with eggs, larvæ and brood, but No. 1 was giving all its attention to raising drones. Not satisfied with building cells as above stated, they built a strip of drone-comb on the bottom of the frames between the bottom bar and bottom board, at right angles with the frames. At this time the hive was full of drones feasting on the meager honey supply and crowding the brood nest. A large number harbored between the inner cover and top sections. I was expecting to find queen-cells preparatory to swarming or supersedure, but suppose as they had plenty of room in super, and the queen was young, they did not get the notion.

Long before this I should have wrung the queen's neck, but as I was determined to carry out the experiment to a conclusion, I let things take a natural course. Needless to say I was feeling pretty proud of queen No. 2.

On the twentieth of June we had a good rain and the flow commenced immediately; white and sweet clover were both in bloom. Both colonies began to store. A second super was put on No. 1 on the 25th and a third on No. 2 on July 1. By this time No. 2 had most of its first super capped and No. 1 was storing in its first super.

July 16 I took off the first super from No. 2 hive, getting fourteen full sections, and refilled with new ones. At this time the second super was partially capped and the third was very heavy with honey. No. 1 colony had two or three sections capped through the middle of the first super and some of the middle sections filled in the second super. The bees had not even drawn the foundation on the sides of either super.

On the 27th another super was removed from colony No. 2, getting twenty-three fully capped sections. On August 1, I took off another with twenty-four capped sections, and on the 5th one more with twenty-five well filled sections. This same date fourteen sections were taken from colony No. 1. In place of returning supers to No. 1, both were given to No. 2 to finish. Forty more sections were removed from the combined supers on the 16th and forty-two on the 31st, making a total of 144 in all, fourteen only being from hive No. 1.

The dry spell came on again and on the 9th I noticed that the honey-flow was off. Now let us look into the brood nest at this time. No. 1 had each comb on the sides full of capped honey. The middle brood combs had honey along the top and fully three inches down the rear. Since the supers were removed they took a notion to oust the drones, and quite a few were driven from the hive. The queen also eased up laying in the drone-cells and began filling the worker-cells again. I still expected supersedure cells, but found none. Colony No. 2 also had honey in the top corner and a thin strip at the top bars, but the nest continued to be full of brood, solid without a break. There were very few drone-

cells along the edges and bottoms of frames.

In conclusion we will deduct that poor queens may not only produce poor quality bees, but may be directly responsible for conditions leading up to a poor honey crop. Do we hear someone ask why did not the bees enter the supers in No. 1 the same as in No. 2? I believe for two reasons: First, the colony was not as strong in worker bees, therefore less honey was coming in; second, the drones occupied the supers, interfering with the duties of the workers. I think this is especially the reason why the side sections were not even drawn, the drones taking charge of these for their clubrooms. Right here let me mention that on one hot day a few bees were fanning at the entrance of No. 2 while quite a bunch hung out on No. 1. I believe these were young bees crowded out of the hive by excess drones. Why was this colony weaker than the other? Because too much energy was consumed rearing drones and there were less workers produced. Why were the drones produced? Now this question is open to debate. Remember the colony was started on new worker foundation. It is my belief that the drone-cells were produced to accommodate the queen, who insisted on laying drone eggs. Why did she lay so many drone eggs? Remember no queen-cells were built. Because she was inferior. Why inferior? Who can tell? Maybe she was injured in shipment, maybe she was roughly handled by the bees when being introduced. Maybe she eloped with a rascal of a young dandy, hatched from a worker-cell. In such case we will try to excuse her, as love is blind.

We shall revive the old slogan, "Good queens, good bees, good comb, few drones and good crop."

(Read before "The Heart of America Beekeepers' Association" at its monthly meeting, November, 1926.)

Honey In the Diet

By R. J. Goss, M. D.

I HAVE been watching with much interest the trend of your campaign in the American Bee Journal relative to the marketing of honey, and after an experience covering several years in the prescribing of honey in diets for various purposes, and which now amounts to approximately a ton a year, I wish to tell you a few of my experiences in procuring a product which will fulfil the requirements of such conditions.

I have learned during these years of feeding and observation that there is a wide difference in commercial honey, from a food expert's standpoint, and should a man engaged as I am in its use be entirely dependent on commercial honey his results would vary so that it would be impossible to succeed.

I am going to give you a few of the things that in my opinion affect honey very markedly for food purposes, and I will begin by saying what should **not** be done with honey, as I have observed them:

First: All honey to be used in diets should be produced in brood combs, because of the addition from these combs of residual brood pap and enzymes, left when the young are hatched, and the additional pollen it will contain.

Second: No honey for diet purposes should ever be heated, at least not above hive temperature, as the heating releases most of the vitamines, precipitates the minerals and kills the action of the enzymes.

Third: All containers in which honey is stored should be air tight and absolutely free from acids, alkalies and mineral sediments, such as is found on tin and glassware as it comes from the manufacturers, as they markedly affect all three of the constituents named in number two, and inhibit their activity.

Fourth: All tinware should be lacquered inside and glass sterilized with live steam before filling.

Fifth: All extracters, pumps, piping, strainers and tanks should be thoroughly cleaned with live steam after each run, to prevent fermentation germs from the air (which are largely of the yeast family) from entering the honey.

When producers of honey realize the fact that the natural product is far more nutritious, better flavored and certain in its action as a food, when they cease blending, heating and otherwise manipulating it, there will be no need to search for a market.

I find great difficulty in supplying my own limited needs, of the standard that I require.

Vermont.

Poor Season

We are feeding here every day now (June 11). There doesn't seem to be any buds on the basswood trees this year. Last year there was a profuse bloom on them and a heavy yield of honey from same.

C. J. Canniford,
Rockton, Ill.

Hamburg Trade in Honey

Imports of honey into Hamburg for the first eleven months of 1926 amounted to 10,416,420 pounds, as compared with 10,423,035 pounds for the corresponding period of 1925, according to Consul E. T. Smith, Hamburg, Germany. Of the 1926 imports, the United States supplied 3,073,770 pounds, being second only to Central American honey (mostly from Guatemala), whose share in this trade was 3,622,815 pounds.

While honey imports into Hamburg declined slightly during the 1926 period, shipments into all of Germany have made a better showing. Total German imports for the first eleven months of 1926 were 10,855,215 pounds, as against 9,227,-925 pounds during the similar period in 1925.

Practically the only honey imported into Hamburg which finds a ready market is of the light or yellow varieties. Artificial honey is used almost exclusively for cooking purposes, and the lighter honey as a table delicacy. There is and probably will continue to be a good demand for the light California alfalfa and orange blossom varieties.

A-B-C in Russian

Up to this time we did not know of any works on bees translated into Russian, except those of Bertrand and Cowan and our own "Hive and Honeybee," which has had six editions. Mr. Vladimir Raykovsky, of Leningrad, now sends us his translation of the A-B-C of Root, which he has entitled "Encyclopedia of Beekeeping," a title really more proper than "A-B-C." It is a book of 864 pages, of slightly larger size than the American edition, and very nicely bound in cloth. Those who imagine, as our newspapers would have us believe, that the Russian nation is composed mainly of murderers and highway men, should see this work. It is a credit to the man who publishes it.

Kansas Can Grade Honey for Beekeepers

A notice just received from R. L. Parker, associate professor of apiculture and state apiarist at the Kansas State Agricultural College at Manhattan, Kansas, states that his department is now in a position to grade honey for beekeepers by the use of the United States standard honey grader.

One of these graders has been installed by his department and he will be glad to have samples of honey to be graded from Kansas beekeepers throughout the state.

Worker Bees from Drone Cells

By A. S. Mikhailoff, Tula Apicultural Experiment Station, Russia

IN the January issue of the American Bee Journal there is an article on "The Variation of Bees and Their Organs," by T. A. Tuenin, of the Tula Apicultural Experiment Station. According to this article, I found, in colony No. 28, a Langstroth frame with sealed worker brood in the lower, or drone half, of the frame, on both sides.

Let me answer some questions arising from the remarks of the editor at the end of Tuenin's article and give to the readers of the American Bee Journal some details which I have obtained concerning bees reared in drone cells.

This colony, No. 28, was one of the good colonies of the station apiary, and at the time of this study, July 6, 1925, it occupied twenty-six frames arranged in two stories—thirteen frames below and thirteen above—filled with honey, pollen and brood. Most of the frames contained worker combs and we cannot, therefore, say that the colony was deprived of a sufficient amount of worker cells.

The frame in question was the fifth from the back in the upper story. The worker brood was sealed in drone cells with normal **flat** cappings; the drone brood was scattered in the frame, a few cells among the worker brood. The openings of the drone cells that contained worker brood were not reduced to the width of worker cells.

The exact average diameter, determined from measuring thirty cells, was 6.96 millimeters (.274 in.), the depth 12.55 mm. (.494 in.) The diameter of worker cells was about 5 mm (.197 in.), and the depth 10.9mm (.429 in.).

This colony, that summer, gathered 23.4 kilograms of honey (51½ pounds), whereas the average crop for each colony that did not swarm was 25.6 kgr. (52 pounds, in a bad season).

The queen that laid this abnormal brood was born in 1922, wintered well, and had normal brood in the spring of 1926, but was superseded, by the bees, about May 18, 1926.

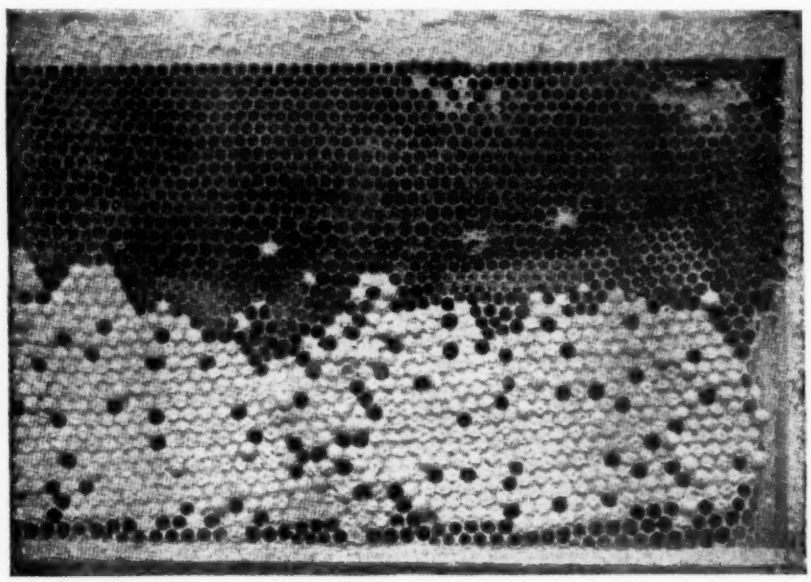
I used biometric methods to find the weight of bees of both sorts. Further investigation, however, showed that it is not possible to measure the size of bees by their weights, as there is no correlation between them.

I therefore measured some of the chitinous parts of bees of both kinds, using a microscope with ocular-micrometer. The records of these studies of fifty bees from worker cells and of sixty-three of their sisters, reared in drone cells, figured biometrically, are shown in the table at the end of this article, with all dimensions given in millimeters (.03937 inches).

From a study of these figures, we can say with certainty that bees from drone cells, compared with their sisters emerging from worker cells, have the following differences:

1. 11.36 per cent greater weight.
2. 4.83 per cent longer proboscis (submentum, mentum, and ligula together).
3. 2.69 per cent longer right fore wing.
4. 2.06 per cent wider right fore wing.
5. The sum of the widths of the third and fourth tergits 4.37 per cent greater.
6. The difference in the number of hooks on the right hind wing, between both sorts of bees, cannot be surely stated.
7. The sum of the widths of the third and fourth tergits in bees from drone cells is more variable than in their sisters from worker cells.

In short, bees from drone cells, generally speaking, are certainly larger than their contemporary sisters, reared in worker cells.



Drone cells from which worker bees emerged as described by Mr. Mikhailoff

	Workers from drone cells		Workers from worker cells		Difference d	Average error of diff. m	Index of unaccidentalness of diff. $\frac{d}{m}$	% of excess	Coeff. of variation	
	Average	Average error of average	Average	Average error of average					Drone cells	Worker cells
Weight of emerging bee	0.1451	0.0014	0.1303	0.0014	0.0148	0.0018	8.2	11.36	10.23	9.23
Length of proboscis (submentum, mentum and ligula together)	6.3644	0.0235	6.0711	0.0199	0.2933	0.0308	9.5	4.83	2.98	3.47
Length of right forewing	9.5704	0.0358	9.3198	0.0282	0.2506	0.0456	5.5	2.69	2.97	2.14
Width of same	3.2363	0.0133	3.1710	0.0133	0.0653	0.0188	3.5	2.06	2.52	2.97
Sum of widths of third and fourth tergits	5.0452	0.0272	4.8337	0.0128	0.2115	0.0300	7.0	4.37	4.27	1.87
Number of hooks on the right hindwing	20.2540	0.2363	20.6000	0.2698	0.3460	0.3586	0.96		9.25	9.26

The average error of the average is 5 divided by the square root of n, where 5 is the standard deviation and n the number of investigated individuals. The difference in the fifth column is warrented when the index of the seventh column is not less than 5. (In other words, all differences, except the last one, are certain.)

In spite of Planta, and according to new investigations (Kohler) there is no difference between the quality of food of worker and drone larvæ. I think the bees of colony 28, deceived by the size of great drone cells, gave more food to these larvæ, as they commonly do for drone larvæ. The greater the quantity of food received by the larvæ, in the first days of their life, at least, caused the resulting enlargements of the bees.

Many earlier naturalists and beekeepers, such as F. Huber, v. Burlepsch, Hudelach, Ziecelsky, Zarudsky, W. Gunther (1879 and 1890), Klempin (1881) Lehzen, Hannemann-Buttel-Reepen, and W. Martinoff, were interested in workers reared in drone cells. Almost all these observers claim that the workers from drone cells had the size of common bees, but they estimated the size of the bee's body by the eye. Only Zarudsky states that bees from drone cells are larger (by the eye) than ones from worker cells.

W. Martinoff found the proboscis of Moscow bees from worker cells was 6.06 mm (.239 in.), but the proboscis of bees from drone cells was 7.01 mm (.276 in.). According to Von Buttel-Reepen (Archiv fur Bienekunde, 1920, page 52) W. Gunther found (1890), in one swarm, five drone combs filled with flatly sealed worker brood. There were cells of drone brood and not one drone in this colony. Buttel-Reepen supposes the queen of this colony was unable to lay drone (unfertilized) eggs.

Rendering Beeswax in Algeria

By A. Bernard

The Kabyle beekeepers of Algeria bring to the Algerian markets their beeswax in the shape of rough balls, which the Algerians render as follows:

They use a press similar to those employed in that country for the extraction of olive oil.

They also use "scourtins," or baskets made of esparto grass, closely woven, in which they pour the melted slumgum while it is hot. These baskets are circular, about a foot in diameter, and have an upper edge which is folded towards the inside. As recipient, they use copper kettles about eighteen inches deep and of similar width.

The lump wax is put into a kettle which has been half filled with water. When the whole thing is boiling, about a gallon of the contents is poured into a "scourtin"; about a dozen of these are thus filled and placed in the press, on top of a flat stone to keep the water drained off. A circular mat of esparto grass is put at the top of the pile. The liquid runs into a pan, and after the wax congeals it is put into sacks and a new pressing is begun. When the job is finished the beeswax is again melted over water and allowed to cool; then the impurities settle at the bottom of the cake. They usually make cakes of beeswax of the shape of a large cheese and weighing from thirty-five to forty-five pounds.

Boy Scouts in Beekeeping

A letter from Mr. Homer Fahrner, Bradley Apartment No. 9, Santa Rosa, California, informs us that the Boy Scouts of that city are taking up beekeeping. They will no doubt find this a very interesting as well as profitable hobby. If we know anything about boys and bees, there will be a number of humorous incidents also. There is a merit badge for each scout who can produce a certain number of pounds of honey from one colony of bees.

Dr. Hans Nachsheim

A visit from Dr. Nachsheim is pure delight. He bubbles with enthusiasm for his calling, the breeding of farm animals, with special emphasis just now on the honeybee. Dr. Nachsheim has been in America for some time, having just sailed for Germany, where he is a professor at the agricultural college in Berlin. He expects to work with bees and is especially interested in race improvement, now made possible by the work of Dr. Watson.

United States Standards for Honey

A bulletin entitled "United States Standards for Honey," prepared by E. L. Sechrist under the joint supervision of the Bureau of Entomology and Bureau of Agricultural Economics, should fill a long felt need. Since the grades of honey differ so much in different markets, it is a difficult matter for a beekeeper to determine the grade of his product in a market other than the one in which he is accustomed to selling.

Much time and effort have been spent in an attempt to provide grades which will be acceptable in all American markets. Besides section comb honey and extracted honey, grades are established for cut-comb honey and shallow frame comb honey. In addition, standards for exhibition section honey and export section honey are offered.

Since the author has consulted with many well known honey producers as well as the leading market specialists dealing with honey, it is expected that the result will meet with general approval. The industry should benefit materially by this effort to clear up the confusion regarding honey grades.

Copies may be had from the superintendent of Documents at Washington, D. C., by sending five cents and asking for Department Circular 410.

A New Publication

Acarine Disease in Hive Bees. By John Rennie, D. Sc. Mr. Rennie is one of the most distinguished British scientists occupying themselves with honeybees. This bulletin, No. 83, of 34 pages, contains much useful information concerning what is commonly called Acarapis woodi, or Tarsonemus woodi.

Mr. Rennie recognizes what we have already suspected, that the so-called "crawling" diseases of the adult bees may be induced by several causes, of which evidently we know only one or two. It is said that the acarine disease does not exist in America, yet crawling troubles have been seen all over the U. S., in localities as far apart as Florida and California, and have been ascribed to entirely different causes in each instance. It is to be hoped that the true causes may sooner or later be discovered.

It is hardly worth while for us to mention the remedies suggested by Mr. Rennie, since this Acaruse does not show itself in this country. But it is worth while for the student to read this work. It is published by Mile & Hutchison, at Aberdeen, Scotland, and the price is one shilling.

Queen-Rearing 150 Years Ago

By the Editor

THOSE of our beekeepers who have purchased the new translation of Huber's "Observations" have noticed that he often wrote to his countryman, the Swiss Bonnet, who was a great naturalist, and that he seemed to place a great deal of value on Bonnet's views. I knew that Bonnet had written a large work upon Natural History, but had no idea of its scope. Not long ago a copy of this work of Bonnet, "Contemplation of Nature," published in Neuchatel, Switzerland, in 1781, was offered to me by a Swiss bookseller and I bought it, ten volumes in quarto.

In this work I found a number of chapters devoted to bees and some letters from Schirach, a pastor in Saxony, member of the Lusatian Bee Society. Mr. Schirach explained that he had discovered that bees could rear queens from any common eggs laid in worker cells.

Up to that time the opinion was that the workers were neuters and that there must be three kinds of eggs laid by the queen, male, female and neuter. The matter is so interesting that I have concluded to reproduce it here. It begins on page 74 of the fifth volume of the Works of Charles Bonnet and may also be found in Schirach's "Natural History of the Queenbee" (1771), translated into French by Blassiere. Here is the Schirach letter, translated from the German into French and by me into English:

"A mere accident taught me, sir, that any portion of brood could supply a queenbee, even when it does not contain any royal cell. I had thought that a lucky accident had always supplied me with an egg to produce a queen in a patch of brood, and that the instinct of the bees had enabled them to discern this egg.

"In order to draw the secret from the bees, I procured a dozen little wooden boxes. I cut out of a hive a strip of brood, four inches square, containing eggs and larvæ. I placed this small comb in one of my boxes so that bees might cover it and in a way care for the eggs and the brood. I enclosed in this box a handful of worker bees. I did the same with the other eleven boxes.

"An observer gains a great deal when he thus divides up bees into small clusters: he compels them to do on a small scale what they do otherwise on a large scale. You had, yourself, suggested this division of bees, in chapter 25 of part 9 of your 'Contemplation of Nature.'

"I kept my little boxes closed up for two days. I already knew that this little tribe, called upon to elect a new queen, must be closed in. On the third day I opened six of my boxes and I saw that the bees had begun to build royal cells in all of them, that each of these cells contained a larva four days old, and that they had been able to select only among the worms which were intended to become worker bees. Some of these boxes had one, two, and even three royal cells.

"On the fourth day I opened the other boxes and found similarly as many as three royal cells. These cells contained a larva four or five days old, lying on a good supply of jelly.

"I did not like the idea that the bees should prefer larvæ to eggs to secure queens. I desired to know the eggs from which queens hatch. I placed under the microscope some of these worms that had been selected for queens. I placed under it also some of those that were to furnish common bees; I measured them exactly and found no difference. I called a naturalist, friend of mine, and asked him to compare these worms; he found only that which I had found myself.

"A few days later I withdrew from the twelve boxes the combs that I had placed in them and substituted other combs, similar to the first, then closed the boxes. Two days later I examined to see whether the bees had used eggs, this time, to rear queens, but I noticed that they had again used worms three days old. I allowed them to carry on their operations and at the end of seventeen days I found, in my twelve boxes, fifteen living and beautiful queens.

"I had made this experiment in May; I allowed the bees to work a good part of the summer. I could count the bees; I did not discover among them a single drone, yet those queens were fertile and produced some young.

"I repeated the experiment in six more boxes. I have already described those boxes in my writings. And as I wanted to find out whether the bees could produce queens out of plain eggs, I placed in three of those boxes combs containing only eggs. When I opened these again I found that the bees had made no disposition relative to the production of queens.

"It was not so in the other three boxes in which I had placed combs with worms three or four days old; each little swarm had reared a queen from those worms.

"I repeated this experiment every month, even in November, when we know bees never swarm, and when they have, therefore, no need of supernumerary queens; each time I secured a fine queen.

"I became so sure of the success of such an experiment that I caused a friend of mine to give me a comb containing only a single living worm, in a worker cell; I supplied this to the bees, which furnished a queen.

"What should I conclude, sir, from these experiments? Our immortal Reaumur had said that the queen would lay one, four, six and even up to fifteen eggs from which queens would hatch, but my experiments demonstrated that each larva of worker bee could furnish a queen. Mr. De Reaumur had also stated that worker bees were entirely deprived of sex, that they were neither male nor female, but all my experiments proved that the worms that produce workers may be changed into queens.

"If my bees had used eggs in my small combs to produce one or more queens I might have inferred that the queen laid, in the course of the year, a great many eggs of queens and that she deposited them in worker cells, to provide against the possible accidents that threaten the life of queens; my conjecture would have been strengthened by the consideration of the great importance of the life of the queen to her people. But I have ascertained, more than a hundred times, that the bees select a worm three or four days old, which, following the ordinary laws of transformation, would have become an ordinary worker bee if it had been reared in the same manner as the others.

"I therefore drew the conclusion that, since there was not a single worm of common bee that could not produce a queen, therefore all the common bees belong to the feminine sex (Dr. Warder, an Englishman, in the 'Monarchy of Bees,' calls the workers ladies or amazons, but no one paid any attention to this); that they must possess, in very minute form, the organs that constitute this sex; that the development of these organs depends entirely upon appropriate food, administered in a lodging spacious enough to permit the development of those organs in all directions; that if, on the contrary, these two essential conditions are lacking, the common bee is condemned to perpetual maidenhood: I compared her humorously to a Vestal.

"It was thus that I reasoned previous to the publication of my experiments; but with how much diffidence did I not publish them! I found

myself compelled to contradict our eminent Reaumur and to introduce a new system in the doctrine of bees.

"I publicly asked all the naturalists, and particularly the celebrated Gleditsch, of Berlin, to repeat my experiments and to correct me if they obtained dissimilar results. I have been waiting in vain for two years. It seems that they are not willing to take the same trouble that I did, or that they believe that Reaumur discovered everything, while he, however, invited the naturalists to fathom further the birth of the queenbee, which he presumed would bring us remarkable exceptions.

"In the passage of this remarkable academician which I have in mind, he was very near our method of forming swarms. Your beautiful suggestions, sir, in the 'Contemplation of Nature,' part 9, chapter 25, led directly to this method, which is precisely the one that we use now. It has produced for us, every year, some hundreds of new swarms. I show it in detail in my last work. By this, one realizes how useful these experiments may be in rural economy."

So we see plainly that our queen-rearing methods are positively based upon the discovery of Schirach. It may be well to say that progress was slow, for even Schirach had not discovered that the queen is fertilized in the open air. He thought, as many others did then, that the drones fertilized the eggs in the cells and that the queen did not mate. Thus he writes further, in this letter:

"The propagation of plant lice, which you have demonstrated may take place without mating, is an excellent analogy with the happenings among the bees. The drones have, in their seminal vessels, a prodigious quantity of a whitish liquid. It seems that this liquid is not proportioned to the genital parts of the mother bee. But as the seminal liquid must be not only a stimulant, but also a nourishing fluid, according to your ideas of generation, I conceive readily that this great quantity of seminal liquid of drones must not be superfluous at the time when most of the bees are born. In a word, there is here a beautiful analogy, for Mr. Hattorf has clearly proven that the mother bee is fertile without mating."

It is quite instructive to the students of the present day to see with how much difficulty the observers of former days arrived at the truth. We still have many things to find out, and probably some of the things we think we know will prove incorrect to some extent.

Those of our readers who take an interest in this question of queen-rearing, as described above, should refer to page 38 of the Huber translation, treating of Schirach's discovery.

The Intermountain Cooperation Experiment

By O. A. Fitzgerald

IN the February issue of the American Bee Journal the writer remarked that for perhaps the first time in the history of the honey-producing industry the majority of producers in the five intermountain states supplying the nation's output of white honey were favorable to big scale cooperative marketing. Much has transpired since then and all has served to substantiate the early assertion. Honey producers in these states are, according to every indication, not only for cooperative marketing as a principle, but as a highly desirable practice.

Therein they differ materially from producers of other commodities. Some growers fervently admit one day—usually in the throes of a convention—that cooperative organizations are the surest way to bring the elusive orderly selling into being and the surest way for farmers to build an independence, and the next day will sell to a private speculator, who is as busy as he can be defeating the very purpose which cooperative marketing seeks to accomplish. They speak of unfaltering independence when a decision is not necessary, but when a decision is made take the easiest course and display a marked dependence on a third party.

In that article the parallel between the buying methods in wool and honey circles was cited. In both instances the consumptive demand is on the hand-to-mouth basis, large stocks being a thing of the past, even for speculators. That parallel becomes more applicable in view of the wool season just past. If there ever was a season in wool when orderly marketing should have been followed by the producers it was this. The dealers knew it and went out in February, long before the wool was shorn, and in about two weeks contracted fully 70 per cent of the country's clip. This gave them control and broke the producer's chance.

Honey, like wool, is a commodity that comes on the market in a hurry, and the average producer is anxious to dispose of it in a hurry. Often financial conditions make this imperative, but in most cases selling is the result of a psychological reaction. Say there is a week of heavy buying at a good price. If buyers suddenly call a halt, which they frequently do, the producer gets the idea there is no market. There is no time he wants to sell more than when there is no apparent market. He will sell at a lower figure frequently, thereby establishing a market on a scale of descending values.

Each of the five states will start harvesting the 1927 honey crop at about the same time, the surplus flow coming during July and August. Thus each state will have its marketable surplus ready for delivery at about the same time. What the honey market will be like at that time no one can say now, for honey production cannot be forecast with the same ease as some other crops. But if conditions are normal it would not be desirable to dump the entire production at the same time. It is the purpose of the cooperative to prevent this.

There is one point certain in cooperative marketing. When the agencies opposed to cooperative marketing in any field become an active opposition one may rest assured they see a menace to their complacent supremacy. It is known that certain influences have been brought to bear already to discourage the activity in the intermountain states.

The reason for this opposition is easy to appreciate and understand. In prognosticating in the honey market field, leaders in the intermountain movement found that, while the five states produce only about 15 per cent of the total crop, they figure in the export movement to the extent of 40 per cent. Most important, however, is that the 15 per cent constitutes practically the entire "white honey" output, which finds a consistent demand among concerns blending honey of different grades.

The crucial position that the intermountain states occupy in honey at this time is just becoming apparent. At first it might have been said with all sincerity that they were favoring cooperative marketing solely because "something had to be done." There was a large carryover on hand, with no hope of an improvement in the market. The producers figured that the chief point to be accomplished was better distribution. The marketing of their product had been, they felt, conducted on a beautifully disorganized basis, markets overloaded at one time and short the next; prices sometimes good, but mostly poor. The producers felt that since no one else was very much interested in holding their honey and feeding it to the market as demands justified they would have to do it themselves.

Now an entirely new light is dawning. They have the idea that a strong

organization controlling a big share of the white honey output can exert more than an imaginary influence in the market and can do more than bring better distribution practices into being. Whether this influence ever develops to the point where it will be felt is problematical. In any cooperative venture the human element should not be discounted, though it often is. A cash offer from a private concern is a sore temptation, and the experience of other cooperatives has been that the producer looks to the cooperative with greatest eagerness only in years when the private buyers have their pocketbooks closed. In other words, most producers expect the cooperative to do something miraculous or impossible for them.

It would take at least an 80 per cent signup in the five states to assert a big influence on the market. The reports now are that Utah, Idaho and Wyoming are practically signed up. Reports from Colorado and Montana are not so clear. The gratifying phase of the situation at this time is that in most states the bigger honey producers are behind the movement. It is not uncommon for the little fellow to feel the cooperative is for him, while the big fellow thinks he is strong enough to stand alone. Whether the big producers would stay in face of material market improvements is a matter for the future. Effectiveness of the venture depends upon intact ranks.

There is a feeling among honey producers that the new cooperative will be in operation this fall. It is known that many orders for honey already have been placed, but the organization is yet unable to do business. A future meeting of directors, one from each state, will be held, after which time machinery will be adjusted for actual working. The surplus honey problem, which was worrying many earlier in the year, has ceased to be a nightmare. A large volume remains, but the market is gradually absorbing it.

Though the association's actual policy will be determined at future meetings, it is the consensus of leading growers that whatever surplus remains when the new crop comes on will be consolidated with it and marketed under the new scheme. The producers are fearful of any plan that would involve dumping a large volume of surplus at this time. It would give their new cooperative too great a handicap the first year of its life.

In conclusion, it might be said that more comment is directed to this cooperative development outside the states involved than inside. Producers are going about in a matter-of-fact way; there is a minimum of fanfare and trumpeting. It took some time for them to hit a stride. The undertaking was much bigger than they comprehended. Even now, judging from conditions in Utah, they do not reflect any personal pride in the fact that they are laying the foundation for what will be, providing it develops as planned, the biggest cooperative honey marketing organization in the history of the industry.

Honey for Health

By Jay Smith

HEALTH is the best thing we can possess, yet how few appreciate it till it is lost! Much has been written on health. What have people in the past done to cure disease? What are people doing today? Read the papers and you will see all sorts of drugs, some harmless, some deadly poisons, that are advertised to "cure" most anything. If you are sick, it is because there is poison in your system; and yet, instead of trying to get the poison out to cure you, they want to put more poison into your system. Still farther, they are now hunting for poisonous serums to put into your system when you are well, to keep you from getting sick. Silly, isn't it? And yet the people demand that sort of thing.

Many of you, however, have noticed that there is an awakening along the line of better health. Speakers are being sent out by societies that are endowed so there is no taint of commercialism connected with the movement. These men are the forerunners of a new era of health. What do they tell us? It is simplicity itself. They tell us that practically all of our sickness comes from improper food. All we need to do to be well and keep well is to eat the natural foods as God made them for us! Yet instead of doing that, people prefer to have a change of climate. They prefer to take dope and have poison squirted into their system and go to the hospital and have some organ cut out or have some gland grafted on. Friends, health, that glorious God-given blessing, that Divine state, without which life is worthless, cannot be possessed in any such way. You must earn it by right living!

But I had better begin talking honey or the editor will not be able to see just where this belongs in a bee journal.

To be healthy, we must get back to Nature and eat natural foods, and, as honey is the only natural concentrated sweet we have, it should be the only sweet we should use. But most people will say, "Oh, that is too radical; we have to use sugar in many things." All right, then, I can only say that if you do, and exercise the same inconsistency with the rest of your food, good health cannot be yours. Any sugar or syrup on the market is totally unfit for human food. The body needs sweets in abundance, but Nature, that all-wise Nature, has put sugars in fruits and vegetables and in flowers, in the form of nectar, in the right proportion and in the right form for us. Now, friends, all there is left for us to do, if we have sufficient intelligence, is **just to eat it.** The moment you begin to filter out the mineral salts and kill the vitamines by cooking, just then you are making it unfit for food and may even make a poison.

Civilization, so called, has brought on an unnatural appetite for sugar. For ages people have drunk alcoholic beverages, which are nothing but sugar in a different form. People, when they stop drinking, eat large quantities of sugar and candies. So the habit of sweet-eating is general. Take your average meal and see how much denatured, devitalized sugar you have in it, remembering at the same time that the food would be better without a single grain of sugar. First you have bread; there is sugar in that. If you had a grapefruit you probably ruined it with sugar. You have coffee or cocoa with sugar; you have a slice of sugar-cured ham ; you have custard with sugar in it, a piece of pie with sugar in it, and finish with ice cream spoiled with sugar. And then you probably want some after-dinner mints!

In talking honey, we must not insinuate that eating honey is the only health habit, for it is only one of the many natural foods. And we should not try to make people believe that it will improve health if they eat a lot of honey and still continue to eat sugar as they do at present. If we can get them to use honey **in the place of sugar** we have rendered them a real service.

But is it practical? I want to go on record as saying it is, not only practical, but also, when you get accustomed to honey instead of denatured sugar, you will like it much better and will soon lose your appetite for such quantities of sweets.

In my own family we have gradually used honey instead of sugar till, for some time back, we have not had

a **grain of sugar in the house.** Before we ever sell our honey as we should we must let the people know that it is a health food. The main advertising that honey is getting today is by the disinterested physician and health authorities. Hardly an authority on foods but what recommends honey. Kellogg is giving honey a great boost, and McFadden, in Physical Culture, repeatedly recommends honey in place of sugar. It is well for the beekeeper to patronize such parties and, in doing so, give them a word of appreciation for what they are doing for us.

In using honey in cooking and in place of sugar, I wish to give a few recipes we have used and found most delicious:

Strawberries, unless very ripe, are too acid for most people when not sweetened. A little honey will greatly improve their flavor. If peaches are real ripe they should be eaten without sweetening, but if too tart, honey is better than sugar.

This last year we canned peaches with honey, using a pressure canner, and we all voted them by far the best flavored peaches we had ever eaten. The flavor of the honey had not been injured by the cooking. Hereafter all of our canning will be done with honey.

Honey used in whole wheat bread greatly improves its flavor and wholesomeness, and such bread does not dry out, but remains soft and moist. If you never ate pumpkin pie made with honey, you have a surprise awaiting you. Gingerbread made with honey is far superior to that made with molasses.

If you make your own ice cream and want the best, take some pure cream and put in a little sweet clover honey and nothing more; freeze it slowly so as not to churn it into butter.

How about coffee? Well, if you are interested in health, better not use coffee, but if you do you will soon get used to honey in it. Once in a while we use Kaffee Hag, which is pure coffee with the kaffein removed. Sweetened with honey, it makes a good drink.

Mayonnaise dressing. Do not use vinegar, as it is a poison. Instead, strain the juice of two lemons and bring to a boil. Add one level tablespoonful of flour beaten with two eggs. Cook, stirring constantly till thick; when cool, add one-eighth teaspoonful salt, three tablespoonfuls olive oil, two tablespoonfuls liquid honey and one tablespoonful prepared mustard, if desired. Beat thoroughly and chill. This is one of the most delicious and healthful of any dressing we have used.

Honey in baked beans is excellent. Sweeten your baked apples with honey if they are too sour. One of our favorite deserts is whipped cream sweetened with honey, and a few nut meats sprinkled in, served on stewed prunes or peaches.

Indiana.

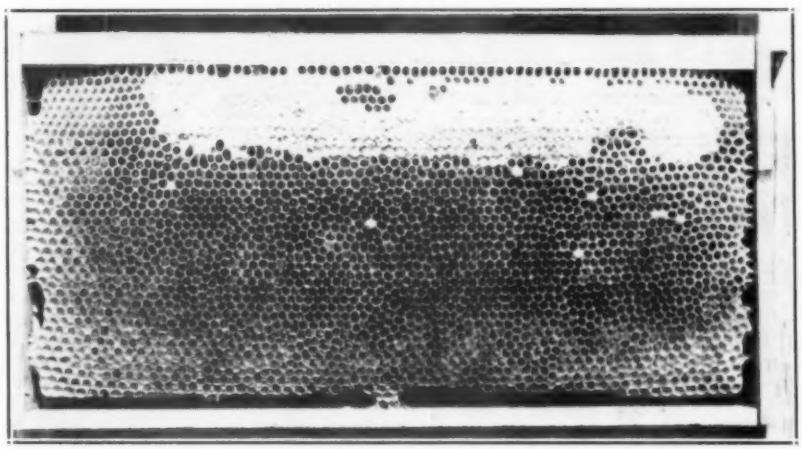
We Agree

From a recent letter received from B. F. Smith, Jr., of Fromberg, Montana, we extract the following:

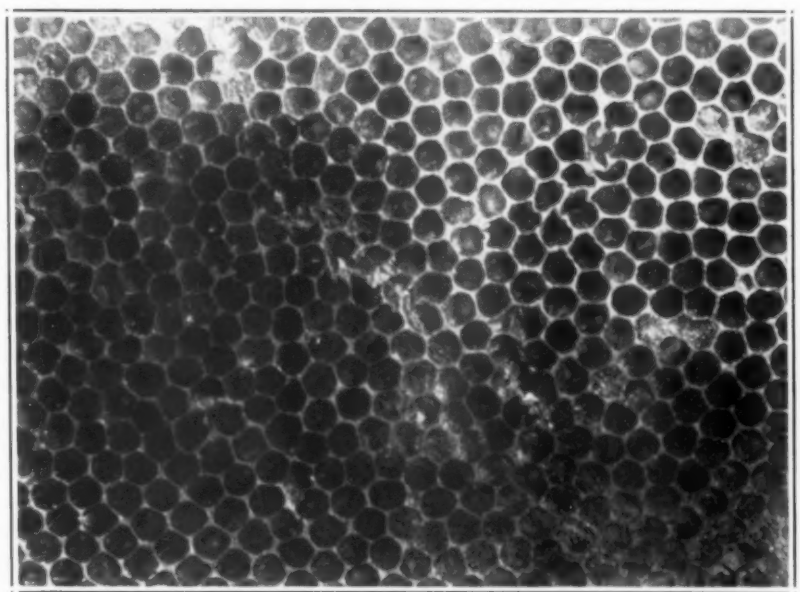
"I have been waiting for over sixty days for someone to hand Hershey a bouquet for the advertising they are giving honey by putting on the market Hershey's Honey Bars.

"A beekeeper remarked to me that the beekeepers needed more than one Moses to lead them out of the wilderness, and that Hershey is using honey while others are merely suggesting it. He contended that what we have to pay for is worth something and that what we receive for nothing is worth just that. Most beekeepers buy some candy, so why not buy 'Hershey's Honey Bars' and get your storekeeper to boosting honey in that form? They are good, too."

Worker Comb Built Upon Drone Foundation



Notice its irregularities, due to the difficulty of making small cells on wide bases. Notice also that there is pollen in some drone cells. The bees were unable to change all of it into worker-comb and there are cells of all shapes, round, square, triangular, etc. The cells are not in line horizontally as they were in the foundation. Notice a boat-shaped cell at right of center. Its bottom comes to a point like a pig trough and is half depth. Mr. Diemer, who furnished the comb, says it is a poor job of plumbing, that the plumber must have been away on a drunk.



A smaller part of the comb, a freakish piece of bee work

For Practical Beekeepers—Lewis 4-Way Bee Escape

ONLY **16c**

Empty your full supers easily and quickly!

IT'S no longer necessary to shake bees in the hot sun or be stung up taking off supers at night. The famous "4-Way" Bee Escape solves the problem. Fully guaranteed. Full instructions, with Golden Beeware catalog of latest improved quality supplies, sent postpaid to anyone in North America. Write today.

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78 Seconds

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American Cans and Pails, Glass Honey Jars, Wired Foundation
Catalog for the asking

If you wish prompt service, write

B. F. SMITH, Jr., Fromberg, Montana

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

CLIPPED QUEENS AND SWARMS

1. If the queens are clipped and two colonies swarm at the same time and unite, will the bees, when they go back, go back to their respective hives, or will they drift into one hive?

2. If a bee is once a robber, is it always a robber?

3. How and with what are queens marked?

4. How much ginger should be added to a honey and water anti-freeze radiator solution to keep the radiator from leaking?

5. When queens are shipped, should real young bees be sent along as escorts, or should the escorts have had a play flight before shipping?

6. What influence does rainfall have on nectar secretion? I believe I have read that rain was of most value six weeks previous to the honeyflow. Is this correct?

7. How are combs washed after having been sterilized with a water-formalin solution?

8. Should bees be smoked before screening and unscreening when moving bees? Or does smoking the bees before screening disturb them too much?

9. How long and how often will it be necessary to smoke bees before screening them when moving in order to get the bees in the field when the bees are flying?

10. Will bees repair a hole in a comb more readily if it is near the top than if it is near the bottom of the comb?

IOWA.

Answers.—1. All the bees that have had previous flights will be likely to go back to their own home, but the young bees will probably enter the hive to which the greatest number go because they have not learned the location of their home very fully.

2. No, robber bees may become very inveterate thieves; but when the honey crop comes they will soon forget the old habit of robbing, for gathering nectar out of the blossoms appears to please them much better than taking honey out of the hive. During a heavy crop, we have occasionally left a super full exposed a half day and no bees bothered it.

3. Some people mark their queens by clipping their wings a little differently each season and making note of the method for each year, during a cycle of three or four years. Others mark them by dropping a very little drop of quick-drying shellac, colored, on the thorax. Vermillion is the best color to use.

4. Never heard of ginger being used in anti-freeze solution. I would prefer to add a little alcohol.

5. We have always preferred to use bees that have had one flight.

6. This is guesswork. Rain six weeks previous to the flow would leave very little moisture in the ground, in our middle states.

7. After the formalin is emptied, the combs may be filled with water by the use of a sprayer or an ordinary sprinkling pot. If no such implement is at hand, they must be shaken in a tub of clear water. They are then emptied with the extractor and put to dry in an airy place, away from direct rays of the sun.

8. I see no necessity of smoking bees before putting screens on the hives or on the entrances, to move them.

9. If you want to move bees, it is best to put the screens on the day before, by nailing the screens upon the top of the brood chamber and leaving the entrance open until just before daylight. If you must close the hives after they have begun to fly, you will surely lose many of them, even if you try to confine them by smoking occasionally. We never tried that method.

10. Bees will repair a hole in the comb at any place where the cluster is located. They will begin with the one nearest to the brood. But if there are two holes near the brood, they will probably repair first the one that is the nearest to the top, other conditions being equal. This matter is of no importance whatever.

MOVING BEES IN FLOW

I bought twenty-two colonies of golden Italian bees two or three weeks ago and have not moved them. For ten days there has been a wonderful flow of nectar from white clover, and there is plenty of white clover where these bees are located, so that their combs are reported by telephone from the former owner to be full of new honey, much of which is unsealed.

I bought this lot of bees purposely to move them to a location near a fair-sized stream of running water, where there is an abundance of white clover pasture and also a fine tract of thirty acres of yellow blossom sweet clover.

The yellow blossom sweet clover is just now starting on a big flow of nectar and I think will continue for six weeks. The white clover may also continue that long.

About half the brood frames in these colonies are wired horizontally and the other half have Dadant wired foundation.

Twenty-five miles of the distance I want to move these colonies is a graveled highway; the other five miles of the distance to move consists of three miles, at the beginning, of good country road, and two miles at the end of the route of country road with several rough places in it. Some of the country road is bumpy.

I expect to use my Ford truck to move the bees. I feel sure there will be twice as much nectar by moving to the sweet clover location as by leaving them where they are.

Would it pay to reverse these hives and put on either extracting supers or ten-frame Langstroth hive bodies in an effort to get the bees to move some of the new honey out of the big Dadant frames in order to lessen the danger of the combs breaking down?

Four weeks ago I moved sixty-five ten-frame Langstroth colonies over seventeen miles of very rough roads, and lost two colonies that had heavy combs of new honey by the combs all breaking down. These two colonies were on a load I drove after night over a very rough road in the dark, my truck lights going out just after I left place of purchase and the lights coming back on as I drove into town.

The thirty acres of sweet clover location is not occupied by any other bees.

MISSOURI.

Answer.—It is always risky to move bees after the crop is on, because, even if the combs do not break down, some of the thin nectar will run out of the cells, and, as the bees are nearly all full of honey from morning till night, they find it difficult to gather it and a great many bees become daubed with it and die. I would prefer to leave the bees there until after the crop.

There is a possibility that there may be a couple rainy days together, at which time they would cease gathering and you could transport them without danger.

(Continued on page 428)

Capacity 40% Greater than the 10-frame hive

Apiary of 50 colonies, like the above, produced 250 pounds of honey per colony in 1925, at Hamilton, Ill. Ten-frame hive average for year, 150 pounds.

More Honey at Less Cost

with the

Modified Dadant Hive

B. F. Kindig, formerly State Apiary Inspector of Michigan, writes:

"The future of the honey business depends upon the profit that beekeepers will make. As beekeepers, you and I have a great deal to do with the cost of production in our yards. . . .

. . . "An Iowa beekeeper writes me: 'After several years' experience with the Modified Dadant hive, I find that it has produced all of 100 per cent more honey with 50 per cent less work than any other hive we have used. I have never lost a colony in the Modified Dadant, and they are so strong that every season is a good honey season.'

"A beekeeper from Missouri writes: 'I have bees in eight-frame, ten-frame and Dadant hives and consider the latter far the better. The Dadant hives yield from 50 to 100 pounds more honey per colony than the others. They are more economical to run and it is not necessary to go through them so often."

(See American Bee Journal, March, 1925, Page 113)

Modified Dadant hives are sold by all dealers in Lewis Beeware and Dadant's Foundation

HONEY CONTAINERS

Pails and Cans of heavy tin plate

Honey Jars of ideal proportions

VALUE

Comb Honey display cases at a saving

Write for our new Price List

Maurice D. Huber, Lanesboro, Iowa, writes on July 9, 1927.

"I received goods in first-class condition within thirty-six hours. That is best service I have ever known."

Yourys very truly,

A. I. ROOT COMPANY

By J. G. Jessup

The greatest money-saving prices ever offered on containers of quality.

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THE A. I. ROOT COMPANY OF IOWA

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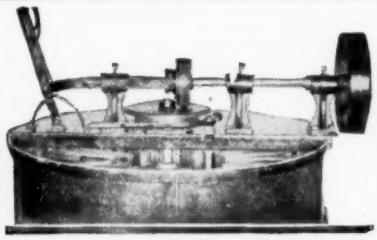

THE

HODGSON RADIAL HONEY EXTRACTOR

(Patented 1924)

Is just the right size for that portable extracting outfit

Manufactured by

S. P. HODGSON & SONS

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CARNIOLANS

are very gentle, very prolific at all times, build very white combs, are little inclined to rob, rarely affected with European foulbrood, and are most excellent workers. They are wonderful workers on buckwheat. Beekeepers in the buckwheat regions would do well to use Carniolans.

We have furnished Carniolans for several state Experiment Stations and state Colleges. Last year we shipped successfully full colonies of Carniolan bees to the Department of Agriculture and Forestry, Tokyo, Japan, for breeding purposes. This feat of successfully shipping bees over 10,000 miles across the United States and the Pacific Ocean has never before been accomplished, so far as known, by any breeder of bees, and certainly speaks well for the wonderful vitality of the Carniolan bee.

Twenty years' experience with Carniolans. We have breeders imported from Jan Strgar, the most extensive queen breeder in Carniola, and M. Ambrozic, an extensive honey producer in Carniola. **Queens reared in August during the buckwheat flow here are the very finest.**

Untested queens, one	$ 1.10
Untested queens, six or more, each	1.00
Tested queens, each	2.00
Line-bred breeding queen (1926)	10.00

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(Continued from page 426)

If you **must** transport them, make some square frames of wood, supplied with wire netting such as is used on window screens. Make them of the exact size of the top of the brood chamber. Nail them on with the wood side down, so that there may be an inch of space above the brood nest, under the screen. A two-inch space would be still better. It enables the bees to gather above the combs. See "The Dadant System of Beekeeping," page 95 fig. 54. That picture shows a space of about three inches above the frames for the bees to cluster in. Nail down the entrance. Haul covers separately.

Move the bees in the early morning, before daylight, as that is the time when they are most quiet.

PRICE OF BEES AND EQUIPMENT

As beekeeping no longer seems to pay in my particular locality, I am planning to sell out. As you have greater experience in the selling of bee equipment and such things, I would be pleased to have your advice relating to matters pertaining to the sale of my bees—that is, regarding the price that I might be able to get for my outfit at a hurry-up sale of same.

My present bee equipment consists of 60 colonies of bees, all rousing two-super colonies, 10 nuclei set out for increase, about 160 ten-frame full-depth supers, honey extractor, 2 100-gallon tanks, queen excluders (about 70), etc.

As I have enough bees and equipment to increase these 60 colonies to 100 colonies—if the honeyflow now on permits, would you suggest that it would be better to increase the number of colonies before selling? Or do you think I would be able to realize as much on my outfit by selling the 60 colonies and equipment, with the honey, etc., just as it is?

I think that the outfit ought to be worth at a bargain sale price around $500, but thought by increasing to 100 colonies I would have less trouble in selling bees for $5 per hive—as increased—than I would by selling the present full-fledged colonies for enough more money to realize the $500 that I feel that the outfit ought to be worth.

In total: Do you think it would pay me to increase to 100 colonies—season permitting—before selling? Do you think I will have any trouble at finding a buyer for my equipment at $500?

Any suggestion you would care to offer will be gratefully appreciated. In haste to get this off in today's mail, with thanks for any kindly advice, MISSOURI.

Answer.—This is the wrong time of the year to sell bees, and, besides, the sale of bees, a whole apiary, by hurried sale, is not usually profitable.

So I would urge you to keep on with your bees for another season, taking care of them just as if you expected to continue the business. When fall comes, if you are still in the same mind, put in an advertisement of the apiary and wait for purchasers. If your hives are in good shape, you should get more than $500 for the lot. But the most winning argument for a sale comes in being able to show a profit, which you could show if the season is good.

If you were to sell at forced sale, I doubt that you could get more than $300 for the outfit.

CAUCASIANS

1. Will you give me the address of a foreign Caucasian queen breeder, one located in a cold climate, similar to Colorado, or colder? Or can you recommend a true-to-race breeder in the U. S.?

2. What would be about the cost of importing a queen or queens?

3. What time of the year would you suggest importing them? COLORADO.

Answers.—1. We know of but one man in the Caucasus who handles bees scientifically, and that is Professor Gorbatcheff, of the Station Apicole and Sericicole, of Tiflis, Georgia. All that country is between the fortieth and forty-fifth degree, so has about a similar climate to that of Colorado. As to a breeder of true-to-race Caucasian bees in the U. S., he would be difficult to find, as there is no district in the U. S. rearing only Caucasian bees, and they are difficult to detect when mixed with common bees.

2. The cost of importing would be probabaly about $2 per queen, if they can be received safely. But there is a law prohibiting the importation of bees from foreign countries into the U. S., so that you would have to order through the Department of Agriculture.

3. Any time in the summer is suitable for the importation, from May to September.

CLIPPING QUEEN'S WINGS

I have just started in with bees on a small scale, and don't wish to lose a swarm. Would you advise going through the stands and clipping the queens' wings, as I am often in the field when they swarm? ARKANSAS.

Answer.—Clipping of the queen's wings will keep her from flying away, but will not prevent her getting lost, as she may try to fly away. So it is necessary to watch your colonies at swarming time, although you don't have to be there to hive the swarm. Some of your people may notice whether the bees are trying to swarm, then you can examine the colony afterwards, to make sure it still has a queen.

It often happens that the queen gets lost, then the bees rear another and are likely to swarm with her. So there is always some attention needed. But if you give your bees lots of room, lots of ventilation and lots of shade, you will have less swarming than if you let things go as they will.

FOUNDATION

I have eleven swarms of bees. I looked into them the other day. They all wintered well; they are all in ten-frame standard hives; they all have straight combs, all these combs made with just a little starter, one-fourth sheet, one and one-half. I examined these combs last summer. The lower half of these combs are mostly drone combs. I see my mistake by not using full sheets of wired foundation. Now what I want to do is to transfer these bees onto full sheets of foundation without disturbing them much. I want to use a deeper hive body. I don't care for any increase this summer. I thought by putting the new hive on top or below they would transfer themselves without destroying any brood. MICHIGAN.

Answer.—Your case is a very convincing evidence of the necessity of either giving the bees no combs at all to build or of giving them an empty hive. I had the same experience as you did, many years ago, and my father, Charles Dadant, explained the matter in this way:

When you give a swarm part of the combs built already, or some foundation that enables them to get far ahead of the laying of the queen, the queen is kept busy and the bees then turn to building combs for storing honey, which, in their opinion, may as well be the larger cells. So when a colony is given a part of the combs already built there is plenty of comb made of drone size.

On the other hand, if the bees have to build all the combs, the queen keeps up, in her laying, with the builders and they continue to see the necessity of supplying worker combs to her. So there is much less drone comb built.

Thus it is necessary to either give the bees all the combs already built, or foundation which they are not likely to attempt

to change, or else they must not be given any combs built beforehand, so that the queen may continue to keep up with them and demand worker combs for her laying.

The method that you propose to follow is all right. After the queen has left the old hive behind and is laying in the new hive, you may cut out the combs and sort them out, destroying all the drone combs and transferring all the worker combs to other frames for future use. When the transfer of combs is properly done, the transferred combs are about as good as those built on foundation.

FOULBROOD IN EXTRACTOR

How can an extractor be safely disinfected against possible foulbrood? Will it be safe and worth while to do so? Extracted honey is often wanted to feed back; besides, bees may gain access to the extractor. The extractor may become infected by (1) one of the owner's hives, (2) loaning the extractor to a fellow beekeeper, (3) extracting on shares or for pay for other beekeepers, (4) buying a used extractor. This is a question we have never seen discussed. TEXAS.

We have never had an extractor knowingly infected with foulbrood. But we always boil our extractors after the crop has been extracted; that is, we pour boiling water in the extractor and revolve it as if extracting. If you are afraid of infection, just add some ashes to your boiling water or use some lye.

There could be other things that would do away with the danger of infection, but I believe that lye in boiling water will wash out the occasional germs that might have remained.

In all these matters, neatness is a great point. If you do things carelessly, you will have cause for trouble at every angle. Keep things clean and you will have very little occasion for trouble.

HONEY IN GLASS

As extracted and bulk comb honey in five- and ten-pound pails are getting harder to sell each year, I would like to ask if honey has to be heated before putting in glass containers? TEXAS.

Answer.—We do not find honey harder to sell each year; on the contrary, customers usually remain with us. But there are seasons when there is less demand for honey.

If your customers are in the habit of using liquid honey and imagine that granulated honey is adulterated, it would be necessary to heat the honey to about 150 degrees before putting it in pails, especially if it is bulk comb honey. But it would be well to inform your customers that granulated honey is pure and that all honey granulates in cool weather. You may then be able to sell it in that shape, as they do in Canada and in Europe.

It is quite important not to heat honey too far above the degree mentioned, because it evaporates the best of its flavor which is due to the essential oils contained in the blossoms.

GRANULATED HONEY IN COMBS

1. I have several brood combs that have granulated honey in them and am afraid to let the bees clean it out for fear of any disease. Would like to save combs, if not honey. Can you advise me what to do?

2. Also have a number of brood combs that are quite badly mildewed. Kindly advise about this. WISCONSIN.

Answers.—1. If the combs had foulbrood in them, or if they were sold to you by some one and you do not know whether there is disease in them, the only plan is to melt them up, save the wax and heat the honey to the degree of boiling water for a half hour, if it is worth saving. But if the hives that gathered that honey did not have any disease, the granulated honey will be all right to feed to your bees.

2. Combs that are mildewed, if not badly mildewed, should be dried up as much as possible, then given to a healthy colony, one at a time, near the brood, and the bees will clean them without difficulty. Badly mildewed combs may not be saved, but I have never seen any that could not be cleaned up in this way.

TO PREVENT GRANULATION

What method is being used to prevent honey from granulating? I would like a detailed account of the various methods now in use. Have any articles appeared recently in any bee publication on this subject? Any information you can give of the best present day practices will be greatly appreciated. NEBRASKA.

Answer.—The only way to keep honey from granulating is to heat it to about 145 degrees, after it has been extracted out of the combs. There is no known way to keep it from granulating when it is in the comb, but only one or two kinds of honey granulate in the comb. To melt honey, heat it over hot water.

But why try to keep your honey from granulating? America is the only country where beekeepers are ashamed to have their honey granulate, and in most countries the buyers prefer granulated honey, for they know that this is a proof of purity and they can always melt it up if they want it liquid. Honey always loses more or less of its quality when it is heated. The dislike of granulated honey is simply a prejudice.

ANTS IN HONEY

Can you tell me how to store comb honey so that ants cannot get into it? Last year I just stacked it in fiber-board boxes and set in an unused room, but I have lately moved into a house where the ants bother and I don't think it would be safe that way. I had some of the whitest honey I ever saw last year, but after being stored a while it turned thin and some leaked out and I thought it was going to sour. I blamed it on the wet weather we had last fall. Do you suppose that was it? ILLINOIS.

Answer.—If you are afraid of ants, pile your boxes containing the honey on top of a stand supported at the four corners by saucers or jars filled with water, so that the ants will have to go through the water to reach the honey. The fiber boxes you used were very good to store it in.

It is quite probable that your honey was not ripe when sealed by the bees, if it soured after being removed. Or perhaps the room in which you kept it was damp. Keep your honey in the driest place you can find, even if it is in an attic.

CAUCASIAN BEES

I am considering purchasing some gray Caucasian bees and would like to know how they compare with the Italian bees in regard to wintering, disposition, swarming, honey producers, prolificness, and what are the objections to them? Thank you. MASSACHUSETTS.

Answer.— The Caucasians winter well, have a gentle disposition, swarm about as much as other bees, but not so badly as Carniolans, are prolific in general, and good honey producers. They compare satisfactorily with the Italians. Their greatest defect is their color, which is so near that of the common bee that it is almost, if not altogether, impossible to detect a mixture, while with the Italians a mixture is at once detected. So we can keep our Italians pure by rejecting the hybrids, but we cannot be sure of keeping the Caucasians pure, be-

Practical Queen Rearing

By FRANK C. PELLETT

PRICE $1.00

"For the Best Success get pure stock, keep tab on every pound of honey taken from each colony, then breed from the best storers that are all right in color and temper."
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This book contains many plans for home queen rearing from one's own stock, as well as in commercial queen rearing.

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FORMALIN SOLUTION

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Sixty-seven Years with Bees and Fifty-five Years a Queen Breeder. Breed Three-Band Italians Only

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
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Select Untested	2 25	9 50	18 00	1 75	9 00	15 00	1 50	7 50	13 50
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cause it is very difficult to detect a mixture. Besides, if you have Italian bees and wish to keep them pure, the rearing of Caucasians will increase your difficulties.

HONEY-BOUND HIVE

I have a hive which is so loaded with honey that there is no room for the queen to lay, the brood nest being completely filled. What is the best thing for me to do, as it is too early for the queen to quit laying? IOWA.

Answer.—That is a very good trouble to have—too much honey in a hive. You may either exchange two or three of its combs for dry combs taken from a destitute colony, or, if you have no destitute colony, take out some of the outside combs, run them through an extractor and put them back into the hive, near the center. If you have no extractor, you may be able to borrow one. But a beekeeper, if he has but two or three hives of bees, should have an extractor, for such an implement is just as necessary to him as a plow to a farmer. You can buy some extractors quite cheap, and may be able to get a second-hand one, as good as new.

MARKING QUEENS

Among about 300 colonies we have a dozen or so of Caucasians. We find these Caucasian queens extremely difficult to find. Is there not a method whereby one can mark these queens so that they can readily be distinguished? COLORADO.

Answer.—If you clip one wing of the queen, it will make her easily distinguishable from the workers on the comb. But a still better way is to touch her corslet with a little drop of vermillion diluted in quick-drying shellac. You can secure that shellac from a druggist or a dealer in paints. You must either use a very small hair brush or a fine stick. The least drop of this shellac will give the desired result and will make a bright spot among the bees of the hive. By using different colors in different years, you will be able to know the age of your queens and also whether they are superseded by younger ones.

INTRODUCING QUEENS

Is it right to kill the bees that are with the queens when we get her, before we install her in the hive, or should we put them in and let them come out with her? MANITOBA.

Answer.—Worker bees are more difficult to introduce safely than queens. When we wish to introduce a queen, we always release the bees that are with her and let them take their own chances on being accepted. Then we introduce the queen alone in the cage. We find that a queenless colony may not feed the bees if they are with her, but will always feed the queen. However, there is a possibility of those bees being accepted, but it is better not to take chances in queen introduction.

VIRGINS ABSCONDING

Please advise as to the measures generally employed to prevent the virgin queen absconding from the hive or mating box.

Will a frame of brood bring a return of the virgin queen? Does the size of the box have any bearing on the return? NEBRASKA.

Answer.—Very small colonies, or colonies without brood, are likely to desert when the queen goes out on her mating flight, evidently because they realize that without a queen they would be hopeless, since they would not have the means of rearing another. We have never known bees with brood and some honey in the combs to desert when the queen leaves for her wedding flight.

Meetings and Events

Interstate Meet for Minnesota, Wisconsin, Iowa, Missouri, and Illinois—Hamilton, Illinois, Aug. 9, 10, 11

These Wilson chautauquas and get-togethers are great things. At least that's the vote of those who have enjoyed themselves at the chautauquas the past few years.

Remember the comedy swims at Madison? The court of mirth held by Judge Barr? The night singing at Platteville? Always something new and lively—something to get the kinks out of your liver, iron out a few wrinkles, make you love Ma all over again.

And more. Something to learn, new things, things you never thought of. People to meet. New friends,—half of beekeeping.

So tighten down the bolts on the old car, pack up the the tent or check out enough for a room. Get the family ready and come to Hamilton for the whole three days.

It's an easy trip, reached over any of the pavements in Illinois, big bridge from Keokuk, Iowa, over a new hard road.

There will be reservations made for rooms in town for those who wish them. Write the American Bee Journal for reservation just as soon as you can. For those who wish to camp, there is a fine park with all conveniences, not far from the river.

The following is a partial program for the three days:

Tuesday, Aug. 9—10:00 to 12:00 a. m., registration and assignments; 1:00-2:00, addresses: James Gwin, president Wisconsin Beekeepers' Association; Dr. A. C. Baxter, president Illinois Beekeepers' Association; C. P. Dadant, editor American Bee Journal.

Facts for Orchardist and Beekeeper, V. G. Milum, University of Illinois.

Beekeeping Investigations in Wisconsin, G. E. Marvin.

The Sugar Curve and What It Means, Huber Root.

Trip to Dadant apiary.

Evening — Entertainment, unannounced.

Wednesday, Aug. 10—Address, Noah Williamson, president Iowa Beekeepers' Association. Studies in Nectar Secretion, Dr. O. W. Park, Iowa Agricultural College; Results with Package Bees in Manitoba, L. T. Floyd, Provincial Apiarist, Winnipeg, Manitoba; Beekeeping in the South, Professor Francis Jager, University of Minnesota.

Visit to the Dadant factory.

Work in Bee Culture in Washington, J. I. Hambleton, Bee Culture Laboratory, Washington, D. C.; Importance of Queen Rearing in Commercial Honey Production, George S. Demuth, editor Gleanings in Bee Culture; The Fundamentals of Queen Rearing, Jay Smith.

Demonstration of Controlled Mating of Queens, Dr. L. R. Watson.

Evening — Entertainment, unannounced.

Thursday, Aug. 11—Address, A. B. King, president Missouri Beekeepers' Association; The New Inspection Law in Missouri, Arthur Allen, State Apiarist; Grading Honey to Establish a Market, C. D. Adams, Wisconsin Department of Markets; The County Inspection System in Illinois, A. L. Kildow, State Inspector of Apiaries; Apiary Inspection in Minnesota, C. D. Blaker; A Case Against the Italians, F. B. Paddock, Iowa Agricultural College.

The program will start promptly after noon on Tuesday and will continue until noon on Thursday. It is not made long and it is not made tiresome. There will be breaks in the platform talks, visits to apiaries and factory, to the big dam which spans the Mississippi; demonstrations and enough fun worked in to keep everybody alive and glad he came.

Fine North Dakota Meeting

Recent advice from J. A. Munro, secretary of the North Dakota Beekeepers' Association, states that their recent meeting held at Cando, N. D., was highly successful.

The association made a substantial contribution to Louisiana beekeepers who had been distressed by flood conditions, the money being sent through Dr. Hambleton, who in turn will turn it over to the Red Cross for direct use of beekeepers.

The association went on record as adopting the new federal grading rules for comb and extracted honey. Weather, program, and attendance were all that could be expected and Mr. Munro reports bees in excellent condition, with fine prospects at the time, July 9.

League Convention

The convention of the American Honey Producers' League to be held in San Francisco, January 25-27, 1928, is assuming additional importance through the decision of the officers of the California Association of Beekeepers to hold their state convention in San Francisco at the same time.

This was brought about through the influence of President R. K. Bishop of Orange, Calif., C. Hauser, chairman of the board of managers, Sacramento, and George H. Vansell, secretary-treasurer, junior agriculturist of the Experiment Station of

Moore's Strain

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view.

By careful selection during all these years I have succeeded in producing a strain of three-banded, leather-colored Italian bees, known as **MOORE'S STRAIN OF ITALIANS**, which has won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. A. K. Whidden, San Jacinto, Cal., says: "In 1913, 80 per cent of the bees in this district died of European foulbrood. I had an apiary of 60 colonies headed by daughters of your queens in which I did not lose a colony, and in 1914 they made 360 pounds per colony.

"In 1917 I bought 12 queens of you and introduced them to diseased colonies. Four of them became too weak to recover, and they all got rapidly worse until it looked impossible for any of them to recover. In eight of them, as soon as the young bees from your queens began to hatch, the disease began to disappear. They cleaned up and stayed clean."

I am now filling orders by return mail.

Untested queens, $1.00; 6, $5.00; 12, $9.00. Select untested, $1.25; 6, $6.00; 12, $11.00. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, Morgan, Kentucky

60c each

Good untested queens, any number. Pure three-band bees that get the honey.

D. W. HOWELL, Shellman, Ga.

Middle Tennessee Queens

Fifteen years' experience with bees

Ten years a queen breeder
Three-banded Italians

Untested:	
Single queen	$ .70
Per dozen	8.00
Per hundred	60.00
Select Untested:	
Single queen	$1.00
Per dozen	11.00
Per hundred	80.00
Day-old queens	$ .50 each
Tested queens	1.25 each

I guarantee satisfaction and safe arrival in U. S. and Canada

MIDDLE TENNESSEE APIARIES
Leo C. Parks, Mgr.
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BOOKING ORDERS

for high-grade three-banded Italian bees and queens: 2-lb. package with select untested queen, $4.50; discount on quantity. Select untested, $1.00, $10.00 per dozen; select tested queen, $1.50. Inspector's certificate with each.

J. ALLEN, Catherine, Alabama

HONEY JARS will sell your honey

4 SIZES
Individual
Half Pound
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Accurate Graduation

Made of Clear Glass they give that increased sales value to your honey. No panels that catch shadows which darkens the color. Beautiful in Clarity and Pattern and strength in Construction
A trial will convince you!

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NUSBAUM'S ALBINOS *Are Gentle, Prolific, Beautiful and Truly Wonderful Honey Gatherers*

They are bees that any beekeeper would be delighted to show to visitors. They are always very quiet on the combs while being handled. They are the last bees to rob, and therefore not likely to spread disease. Quite unlike Italians in this respect. They do not readily hybridize with other bees, but retain their purity. They are beautiful. Their characteristic bright white, black and yellow colors distinguish them from other races. They are bees that make it easy for the average beekeeper to get good crops of honey. Anticipating a repetition of the 1926 avalanche of orders for these queens, would advise early orders. Circular and price list free.

STERLING NUSBAUM **Taneytown, Md.**

Where the ORIGINAL ALBINOS Come From

the University of California at Davis, Calif.

In view of the fact that the last meeting of the national organiaztion was held on the coast nearly twenty-five years ago, and that there has been increasing interest in the state organization, those in charge of the program believe that the coming meeting in San Francisco will be, perhaps, the largest attended meeting of men interested in bee culture that has ever been held in the United States.

President H. F. Wilson of the University of Wisconsin, Madison, Wis., and Secretary C. L. Corkins of the University of Wyoming, Laramie, Wyo., are working on details of the program for the national convention. An exhibit is to be conducted in connection with the national meeting. This feature will be in charge of Secretary Corkins.

Thumb Meet in Michigan

There will be a meeting of the beekeepers in the Thumb district of Michigan, at the home apiary of Mr. David Running, Filion, August 5 and 6. August 5 will be devoted to talks by local and out-of-state speakers, while the 6th will be given over to a tour of commercial apiaries in the Thumb district.

The summer meeting of the Michigan Beekeepers' Association, which will be held at Petoskey, August 25 and 26, forms a splendid opportunity for southern beekeepers to visit northern Michigan at a time when the crop is on hive ready for extracting.

Local beekeepers in charge of the program promise a good time to everyone in attendance.

Alabama Meeting

Notice from Winford A. Ruffin, Extension Entomologist for Alabama, is to the effect that Alabama state beekeepers are to have their annual convention in connection with Farmers' Week at Auburn, Alabama, Aug. 1 to 6. The association bee meetings will be held on August 4 and 5.

A complete program is available to anyone interested by writing to W. A. Ruffin, Extension Entomologist, at Auburn, Alabama.

West Virginia Meet

The date of the West Virginia State Beekeepers' Association has been definitely set for August 11 and 12. The meeting will be held at Jackson's Mill.

Eastern Massachusetts Field Day

The annual field day of the Eastern Massachusetts Society of Beekeepers will be held August 27, 1927, at the Norfolk County School

(Continued on page 435)

(Continued from page 432)

of Agriculture, Walpole, Mass. Good speakers will be in attendance.

All beekeepers, whether members or not, are cordially invited, as well as those of the general public who may be interested in the gentle art.

Wyoming Beekeepers Hold Convention

Wheatland, Wyoming, on July 16 was as "busy as the bee," entertaining visitors from many parts of the state who came to attend the convention and picnic of the beekeepers. The Wyoming state officials recognize the bee industry as of paramount importance, and are only too eager to lend all the assistance they can. We found Professor C. L. Corkins of the State University, A. D. Faville, State Agriculturist, and George W. Pitman of the Cheyenne Weather Bureau, principal speakers. All within hearing carried away better methods of caring for the bee, and many who had not given much thought to beekeeping are "thinking it over."

Another News-Letter

"The Montana Honey-Flow" is the title that graces the front page of the official news-letter published by the State Apiarist and the Montana Beekeepers' Association for distribution in that state. Several of the state organizations now have a means of this kind of keeping the members informed as to matters of local interest. Such a medium serves a very good purpose.

Another New Bee Paper

"Washington Bee Gum" is the name of another bee paper, the first copy of which has recently reached the editor's desk. It is put out by the Washington State Beekeepers' Association, with Miss Helen Steiner, editor. Her address is Elma. It is a nice little publication with news notes of interest to Washington bee men.

Minnesota Beekeeping Survey.

James W. Thompson, of the University of Minnesota, is conducting a beekeeping survey of that state. An extended enquiry is made as to the number of colonies kept by each beekeeper, kind of equipment, race of bees, method of wintering, etc. Much valuable information should be obtained as a result.

Legumes for Texas Beekeepers

Circular No. 46 is published by the Texas Agricultural Station, Division of Entomology. It is written by H. B. Parks. The main legumes recommended are the different varieties of sweet clover and crimson clover. It is a pamphlet of twelve pages.

New Hampshire Summer Meet

The New Hampshire Beekeepers' Association will hold its annual meeting at Durham, N. H., on Thursday, August 18, in connection with Farmers' and Home-Makers' Week.

Edward Winkler Killed

We regret very much to announce to our readers the death by accident of Edward Winkler at Joliet, Illinois. Mr. Winkler was killed on the afternoon of June 19 as he was making a trip to one of his outyards.

He was struck at Morgan's crossing, two miles south of Elwood, Illinois, by "The Red Hummer," a crack train of the Chicago and Alton Railroad.

Mr. Winkler was the second largest beekeeper in Illinois, was only thirty-five years old and in his prime in activity in the beekeeping line. He had some eighteen different apiaries of bees located in different sections of the country surrounding Joliet.

Our older readers will recall Mr. Winkler as having been one of the greatest proponents of the sowing of sweet clover, both Hubam, yellow and biennial, several years ago, and being instrumental in distributing information to farmers and beekeepers as to the proper method of preparation of seed bed, harvesting, etc., of sweet clover.

In fact the American Bee Journal carried several articles from the pen of Mr. Winkler, well illustrated, giving details on sweet clover manipulation and harvesting.

The sympathy of the American Bee Journal Staff and of all our readers, we are sure, goes to the widow and three small children who are bereft.

Announcement comes from the widow that the bees, handled by Mr. Winkler, will be handled directly by her.

The Winkler apiaries are located in the heart of the fine sweet clover producing area and in that section of Illinois which was in past times covered by the northern glaciers leaving deposits of limestone, which in most instances make it unnecessary to lime the soil in preparation for sweet clover production.

It is unfortunate that Mr. Winkler did not live to see the complete fulfilment of his idea which is gradually spreading over the entire country and in Illinois and many other states becoming the major project in the rotation of crops.

More Sidelights on the Flood Situation

Undoubtedly our subscribers, or at least some of them, are going to have complaint to make of some of the southern breeders who were caught in the flood area. This is not surprising, because of the fact that the flood came with such a rush and in many instances queen breeders were not able to save even their correspondence or unopened letters which had accumulated while they were fighting the flood menace on the levee.

We are assured by many of these breeders that they will eventually be able to make good on all of these complaints, but are asking for as much leniency as possible.

Our suggestion to subscribers who have complaints to make is that they reserve these until fall and then turn same in directly to the breeder interested, who will, we are sure, meet him more than half way.

From last reports, we understand that all material and bees donated to beekeepers' flood relief is being shipped in care of the American Red Cross at New Orleans, Iouisiana, and turned over to the Rehabilitation Committee without any freight or express charges. For full information, write to Mr. W. E. Anderson, State Entomologist, Baton Rouge, La., who can give you full detail.

The Rehabilitation Committee is busy at present selecting all donated materials and preparing the hives, filling same with packages and getting them ready to ship to those who have had the heaviest losses, in proportion to their lot.

These apiaries for rehabilitation are located near New Orleans, in an area which makes it specially desirable because there is a possibility of getting all bees built up yet during the later flows.

Our Cover Picture

Mr. N. E. France and his lovely wife, whose pictures grace our cover page this issue, are so well known that this fine likeness will be a pleasant approach to the many friends who have already seen them and an introduction for those who have known them by name only.

There is another reason for this cover. August 9, 10, 11 are the days of the interstate meeting at Hamilton, an annual event inaugurated by Professor H. F. Wilson, of Wisconsin, among the states of Minnesota, Wisconsin, Iowa and Illinois. Last year the meeting was a chautauqua at the home of Mr. France, at Platteville, Wisconsin. We expect him to be here with Mrs. France for the occasion, as the immediate past host.

Crop and Market Report

Compiled by M. G. Dadant

For our crop and market report for the month of August, we asked reporters to answer the following questions:

1. How is the crop?
2. What are the prospects for the balance of the year?
3. Any bids on honey? If so, at what prices?

THE CROP

The whole southeast section of the country has been very much disappointed with the crop so far. Less than 50 per cent of a normal crop will be harvested in Florida, Alabama, and Mississippi. Other sections report the crop as being from 50 to 75 per cent of normal. Some sections of Georgia even report bees nearly starving, with no surplus so far.

In New England, New York and Pennsylvania, the crop is late and spotted. We believe that there will be about as much honey as last year, but not the amount that was at first anticipated. The reports from New York especialy range from very poor to very good.

It is in the Central West that the crop is a boomer, and this extends pretty well across the country from Ohio to central Iowa and from southern Illinois and Missouri to northern Michigan and Minnesota. These latter sections have been very backward, but the honey-flow is coming along magnificently.

Some sections of southern Wisconsin, northern Illinois and most especially central Iowa and western Iowa have not had sufficient late rains, and as a result the crop will not materialize. This is especially true of central Iowa.

North Dakota, which had only had a moderate crop last year, seems to be coming back into her own, from the latest reports. The crop is late and much yet to be harvested, but all signs point to a crop like those which have made this state famous.

South Dakota has also been late in materializing, but the possibilities are there nevertheless, with alsike, white clover and sweet clover all claiming attention at the same time.

The flow seems to be extending pretty well through the plains states, with better than average crops reported in Nebraska, Kansas and Oklahoma.

Louisiana will be short both from the flood and weather conditions. Texas was a disappointment early, but has made up some ground since. It is doubtful, however, if the crop will equal a year ago.

New Mexico was like Texas, poor early but endeavoring to make up by later flows. Arizona has had a good crop.

In the intermountain and north coast territory it is as yet too early to guess, except that most sections have ample water this year for irrigation, and should for that reason be in as good or better position than a year ago.

California has been a huge disappointment to its beekeepers. A propitious season was promised, which has been more than cut in two by unfavorable weather. This is especially true for the south half of the state.

All in all, the crop should equal a year ago, with the difference that the bumper crop will be in the central area, where it should be more easy to move it without interfering so much with the general markets, as well as the foreign demand.

PROSPECTS

The Southeast looks sadly upon the rest of the year, with little hope of making up lost ground. All northern sections and central areas still have hopes for the future because, generally, the flow is late, the subsoil still moist and most sections have had late rains to help out. The big crop of the central area may be made a bumper by favorable late summer and fall conditions.

The same applies to the plains states. Intermountain sections still have their crop before them.

OFFERS

Very little honey is being offered and such offers as are made are low. We learn of one sale in Arizona at a price of 6 cents for new crop white honey on a forced sale, and offers as low as 5½ and 6 cents in the same area.

Holdover honey in the intermountain section is being quoted upon as low as 6 cents, with little disposition to sell at this figure.

Although the present crop will undoubtedly be large in northern and western sections, it should be made up in part by shortage in the Southeast, East, and in California, so that we see no reason for uneasiness.

Undoubtedly the central west producers will have a chance to see some cut prices from the little fellows, who were able to get a crop this year with nothing more than a box and a swarm to start with.

SUGGESTED SELLING PRICES HONEY---1927-28

In figuring sales to retailers deduct 20 per ccent from retail price below. For jobbers, deduct an additional 15 per cent. Prices suggested are for good white grade. For amber, deduct 2 cents per pound.

	New England	Atlantic Coast	South-east	Central West	Plains	Louisiana-Texas	South-west	Inter-mountain	North-west	California	East Canada	West Canada
16-Ounce Jar	$ .40	$ .35	$ .30	$ .30	$ .30	$ .30	$ .25	$ .25	$ .25	$ .30	---	---
2½-Pound Can	.75	.70	.60	.65	.60	.60	.60	.60	.60	.60	---	---
5-Pound Pail	1.25	1.25	1.10	1.00	1.00	1.00	.90	.90	.90	1.00	1.00	.90
10-Pound Pail	2.25	2.25	1.80	2.00	1.80	1.90	1.75	1.75	1.75	1.75	2.00	1.75
60-Pound Can	.17	.16	.15	.15	.14	.12	.10	.11	.11	.12	.13	.13
10-60-Pound Can	.15	.14	.12	.12	.12	.10	.09	.10	.10	.10	.12	.12
Carlot,2-60	---	---	---	.10	.10	.08	.08	.09	.09	.08½	---	---
Barrels	---	---	.09	.10	---	---	---	---	---	---	---	---
2½-Pound Bulk Comb	---	---	.60	---	---	.65	---	---	---	---	---	---
5-Pound Bulk Comb	---	---	1.10	---	---	1.10	1.00	---	---	---	---	---
10-Pound Bulk Comb	---	---	2.25	---	---	2.00	1.90	---	---	---	---	---
Comb, Single Section	.40	.35	.30	.30	.30	---	---	.25	.25	---	---	---
Comb, Fancy, Case	7.00	6.50	5.50	6.00	6.00	---	---	5.50	5.50	---	---	---
Comb, No. 1, Case	6.00	6.00	5.25	5.50	5.50	---	---	5.00	5.00	---	---	---
Comb, Choice, Case	5.50	5.75	4.75	5.00	4.50	---	---	4.50	4.50	---	---	---
Comb, Fancy, Carlot	---	---	---	---	---	---	---	5.00	5.00	---	---	---
Comb, No. 1, Carlot	---	---	---	---	---	---	---	4.50	4.25	---	---	---
Comb, Choice, Carlot	---	---	---	---	---	---	---	3.75	3.75	---	---	---

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is free from disease or be accompanied either by a certificate of inspection from an authorized inspector or agreement made to furnish such certificate at the time of sale.

BEES AND QUEENS

REQUEEN NOW—75c will buy one of my beautiful golden Italian queens. Send at once. J. F. Michael, Winchester, Ind. R. 1.

KANSAS BRIGHT ITALIAN QUEENS—A. M. Hunt's strain. One untested, $1.00; six, $5.00; dozen, $10.00. Tested, $1.50.
C. W. Ward, LeRoy, Kans., R. 1.

MINNESOTA QUEENS—Three-banded Italians that produce gentle bees; unexcelled honey gatherers. Untested, $1.00; 25 or more, 90 cents. Tested, $2.00. Safe arrival and satisfaction guaranteed.
Hopkins Apiaries, Withrow, Minn.

FOR SALE—Palmetto Italian queens, good as any, superior to many, 50c each. Want contracts to furnish queens, season 1928, at 50c each.
C. G. Ellison, Belton, S. C.

AMERICAN BEAUTY Italian bees and queens. Tupelo Apiaries, J. L. Morgan, Prop., Apalachicola, Fla.

SUPERIOR THREE - BANDED ITALIAN QUEENS by return mail, any quantity from one to a thousand, 60 cents each. No disease and absolute satisfaction guaranteed. We ship only the best queens that can be produced.
W. C. Smith & Co., Calhoun, Ala.

FOR SALE—Choice bright Italian queens. I have been building up this strain for the last 24 years for vigorous hustlers, good winterers, gentleness, and fine color. These queens will equal the best on the market. Health certificate goes with queens. Prices. Untested queen, $1.25; 12 untested queens, $12.00; one breeder, $10.00.
Emil W. Gutekunst, Colden, N. Y.

60 CENTS EACH—Good untested queens, any number. Pure three-banded bees that get the honey.
D. W. Howell, Shellman, Ga.

GOLDEN ITALIAN QUEENS that have the other qualities desired in bees as well as the golden color. Prices: Untested, $1.00; 6, $5.25; 12 to 49, 75c each; 50 or more, 70c each. Health certificate and safe arrival.
Hazel V. Bonkemeyer,
R. 2 Randleman, N. C.

GOLDEN ITALIAN QUEENS—Untested, $1.00; six, $5.25; twelve or more, 75c each. Select untested, $1.10; six, $6.00; twelve or more, 95c each. State inspected, safe arrival. Money back if not satisfied.
Sam Hinshaw, Randleman, N. C.

GOLDEN ITALIAN QUEENS for balance of season, the big bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, 85c each; six, $4.75; twelve, $9.00; 100, $65.00. Tested, $1.50 each. Safe arrival guaranteed. Health certificate furnished.
E. F. Day, Honoraville, Ala.

RUSCHILL'S Iobred Italian queens produce light colored, three-banded bees that are real honey getters. Untested queens, $1.10 each. Charles L. Ruschill, Colfax, Iowa.

FINEST ITALIAN QUEENS—$1.00 each.
William R. Stephens, Wingate, Ind.

PURE ITALIAN QUEENS—The kind that pleases. Prices attractive. Guaranteed satisfaction or money back. Write
Roy Weaver, Navasota, Texas.

JULY AND AUGUST is the time to requeen with my famous Italian queens at $1.00; six for $5.00. Twenty years' experience as queen breeder.
J. W. Romberger, 3113 Locust St.,
St. Joseph, Mo.

QUEENS BY RETURN MAIL—Why take chances on the quality and delivery of your queens? Your next honey crop depends on them. Why not pay a few cents more and be assured of the best quality and prompt delivery? Requeen now and get your hives in condition for winter. Safe arrival and satisfaction guaranteed. Health certificate with each shipment. One untested, 80 cents; twelve for $9.00. Tested, $1.50 each. Write for circular and complete price list. J. M. Cutts & Sons,
Rt. 1, Montgomery, Ala.

LISTEN—To all new customers answering this advertisement I will sell two of our select untested Carolina queens at the price of one. Two for $1.25.
Carolina Bee Co., Graham, N. C.

REQUEEN your colonies of bees with the best young queens you can get. We have some of them. Give us a trial order. Queens 75c each, $9.00 per dozen. One pound of bees with young queen, $2.90; two pounds with young queen, $4.50. All charges paid to your postoffice. Graydon Brothers,
Greenville, Ala., R. 4.

THRIFTY Caucasian tested queen, $2.00; untested, $1.00; Italian, 60c, by return mail. Yard inspected regularly for protection of disease. Peter Schaffhauser,
Havelock, N. C.

GOLDEN THREE-BANDED and Carniolan queens. Tested, $1.00; untested, 75c each. Bees in 1-pound package, $1.50; 2 pounds, $2.50; 3 pounds, $3.25. Safe delivery guaranteed. C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

DIEMER'S bright three-banded Italian queens, mailed to you in introducing cages, May and June, $1.25; six, $6.50; twelve, $13.00. After June, $1.00; six, $5.00; twelve, $10.00.
J. F. Diemer, Liberty, Mo.

PURE ITALIAN QUEENS—Untested $1.00; tested, $1.50. Two-pound package, $3.00. Add price of queen wanted. Safe arrival guaranteed after May 10. Write for prices on colonies. Birdie M. Hartle,
924 Pleasant, St., Reynoldsville, Pa.

GOLDEN Italian queens that produce golden bees. Very gentle and good honey gatherers. Untested, $1.00; six, $5.40; twelve or more, 80c each. Tested, $1.50. Select tested, $2.50. State inspected. Safe arrival and satisfaction guaranteed. Send for price list. D. T. Gaster,
R. 2, Randleman, N. C.

TRY our high class queens and get the honey. We sell only the best selected Italians, guarantee safe arrival and complete satisfaction in every way. Our queens are personally reared and we want you to try them. Prices are $1.00 each; 6 for $5.50; 25 at 80c each, and 50 or more 75c each. Salida Apiaries,
T. L. Nicolayson, Prop.
Salida, Calif.

HIGHEST grade Italian queens—Tested, $1.50; untested, 75 cents. Package bees, one pound, $1.50; two pounds, $2.50; three pounds, $3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed.
T. L. Davis, Buffalo, Leon Co., Texas.

SIMMONS' QUEENS — One, $1.00; six, $5.50; twelve, $10.00. Prices on nuclei reduced. No disease. Queens by return mail. Fairmount Apiary,
Livingston, N. Y.

PACKAGE bees and queens. Charles Wallace, Box 35, R. 1, Glenn, Cal.

"SHE-SUITS-ME" QUEENS—Three-banded stock. None better. Untested queens from May 15 to June 15, $2.00; after June 15, $1.50. Introduction guaranteed.
Allen Latham, Norwichtown, Conn.

GOLDEN QUEENS producing yellow to tip. Untested, $1.00 tested, $2.00; young breeders, $10.00. Come ahead with your big orders; my apiary has doubled twice over. Satisfied customers everywhere. Safe arrival guaranteed. Print your address.
H. G. Karns, Victoria, Va.

PLACE your order with us for early queens. Caucasian breeders, daughters of 1926 imported mothers, ready for shipment after April 1. Italians of 14 years' selecting. Caucasian untested, one, $1.50; six, $7.50; twelve, $14.00; one hundred, $100.00. Tested, each, $2.50 after May 15. Italians, one, $1.00; six, $5.50; twelve, $10.00; one hundred, $70.00. Tested, each, $1.50. Pure mating, safe arrival guaranteed in U. S. and Canada. Queens for export carefully packed, safe arrival not guaranteed.
Tillery Bros., Route 6,
Greenville, Ala., U. S. A.

EARLY package bees and highest grade Italian queens. Our only business is Bees and Queens. We do not produce honey, deal in supplies or sell off a few old bees in the spring as a side line. Our colonies are worked exclusively for the production of young, vigorous, healthy worker bees for packages. Colonies are drawn on about every two weeks from March 20 to June 20. Two- and three-pound packages. Fifty pounds or more $1.00 per pound. Select three-band Italian queens $1.00 each. Ten per cent deposit will book order and reserve shipping date. Large orders booked in advance will receive special prices. We guarantee both safe arrival and satisfaction.
J. E. Wing, Cottonwood, Calif.
Most Northern Breeder in California

PETERMAN'S select Italian queens from sunny California: 1, $1.00; 6, $5.50; 12, $10.00; 25, $20.00; 100, $75.00. Safe delivery and entire satisfaction guaranteed.
H. Peterman, Lathrop, Cal.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1, $1.00. Tested, $2.00.
A. W. Yates,
15 Chapman St., Hartford, Conn.

WANTED—Orders for May delivery, Italian bees and queens. Quality of queens and full weight of bees absolutely guaranteed. I can fill packages and have bees under way in from twelve to twenty-four hours after receipt of order. Price of two-pound packages with queen, $3.50; three-pound packages, $4.65. Young queens just commenced laying, guaranteed equal to the best, $1.00 each. O. P. Hendrix, West Point, Miss.

FOR SALE

FOR SALE—Four hundred new Modified Dadant frames, $4.50 per hundred.
C. F. Strahan, Linwood, Neb.

SEVENTY first-class colonies. Standard hives, equipment.
E. Frasier, Henderson Harbor, N. Y.

FOR SALE—Twenty ten-frame hives of bees, 87 extracting supers, winter cases, extractor, tank, hive scale, about 3,000 pounds clover honey, other equipment, all in good shape. No disease.
C. F. Strahan, Linwood, Neb.

FOR SALE—800 three-deckers; fine mesquite-alfalfa irrigated locations; moving unnecessary; disease unknown; unrivalled for packages, queens. Easy purchase for approved buyer.
W. A. Walsh, Pima, Ariz.

ONE Root Cowan honey extractor; never been used; cheap; has two 13½-inch swinging pockets. Used 60-pound cans, 14 cases two to a case, 22 cases one to a case; 40c for two cans; used once.
Odell F. Burch, Chincoteague, Va.

FARM FOR SALE—By owner: 160 acres in northeastern South Dakota. Located in fertile James River Valley. Fine country for small grain, livestock and bees. Ton truck, 80 colonies bees and hives with comb and extracting supers for 150, together with all other beekeeping equipment, included with place. Everything practically new. Plenty bee pasture, no disease. Large barn and house, artesian well, new woven wire fence. All level and under cultivation. Good community, fine climate; 1½ miles from church and school, six miles from town. Price $12,500. $4,000 cash, balance 5 per cent. For further particulars write
Wm. L. Burton, Groton, S. D.

FIFTY-ONE YEARS is my beekeeping record; am not very able to care for them. This makes a good opportunity for a young, dependable, honest man to start where it took me 30 to 40 years to attain to. Hundreds of bees, hives, fixtures. If really interested, write a week before you drive over to see them, so I will be at home. Will take half the estimated value for the whole outfit. Delbert E. Lhommedieu, Colo, Story Co., Iowa.

FOR SALE—Forty colonies of bees, 110 acres of land, house and modern barn, farm equipment, small gas engine and saws suitable for making beehives; three cows, two mules, 250 M feet of timber, 400 three-year-old apple trees. Exchange for a small place near big city or seaport.
Henry H. Wilson,
R. 2, Ellijay, Ga., Gilmer County.

HONEY EXTRACTOR—Four-frame hand power with reversible baskets for Hoffman frames, in good condition. Bargain.
W. F. Tilton, 3412 Bales,
Kansas City, Mo.

FOR SALE—Bee farm, 40 acres partly improved cut-over land; good location, 1¼ miles from town; young orchard; good house with full basement. $1200.00 Also 60 colonies bees with supplies.
Novotny Bros.,
Arthyde, Aitkin Co., Minn.

FOX AND FUR FARMING—The fastest growing and the most profitable industry in the world. Our monthly publication, seven years old, prints all the news. Sample copy 25c. Subscription $2.00 per year in United States, $2.25 in Canada.
American Fox and Fur Farmer,
St. Peter, Minn.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn, odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

WILL SELL 75 or more ten-frame hives (Italian bees) at $8.00 per hive. Inquire at Dittrich & Kurdy's, St. Bonifacius, Minn.

A QUANTITY of supers for 10-frame hives, with section holders, fences, wedges and springs. Painted. Like new. $1.50 each. Discount for ten or more.
Merton Church, Highland Park, Ill.

HONEY AND BEESWAX

NEW white orange blossom honey in 60-lb. tins, 12c per pound.
Leutzinger & Lane,
76 Clay St., San Francisco, Cal.

FOR SALE—Water white sweet clover honey, North Dakota's best. Packed as desired.
Victor Apiaries, Chaffee, N. D.

NEW CROP finest white clover honey, comb and extracted. Prices on request.
Irvin A. Stoller, Latty, Ohio.

CARLOAD or less sweet clover extracted honey in new cans and cases. As good as the best and priced right.
L. A. Thrall, Anthon, Iowa.

DAKOTA SUNSHINE HONEY is water white, pure, sweet clover extracted honey. For sale, any quantity.
F. H. Smith & Sons, Amenia, N. D.

EXTRACTED HONEY FOR SALE—Extra fancy Iowa white clover honey; 60-lb. cans, 13c per pound; 10-lb. pails, $1.60; case of 6, $9.00; 5-lb. pails, 85c; case of 12, $9.60. Quality guaranteed or money refunded.
Kalona Honey Company, Kalona, Iowa.

FOR SALE—Clover honey in 5-10 pails. Write for prices.
Otto Beer, Milford, Ind.

FINE new white clover honey in 60-pound cans, 10c; in 5-pound pails, $8.50 per dozen. F. J. Smith, Castalia, Ohio. R. 1.

FOR SALE—Comb and extracted honey, now ready to ship. State your wants.
H. G. Quirin, Bellevue, Ohio.

SWEET CLOVER extracted honey, not extracted until thoroughly ripe. Write for prices, stating quantity. Sample 15c.
Arthur Beals, Oto, Iowa.

GET MY PRICES on clover honey. Any quantity. C. S. Engle, 1327, 23rd St.,
Sioux City, Iowa.

Classified Ads Pull

"Possibly you recall the little ad I put in your March issue, of two honey extractors for sale. I took those over at a forced sale (having no knowledge of bees).

Supposed I would have to list them at least three or four times, BUT I DID NOT HAVE ENOUGH EXTRACTORS FOR ONE ADV. Think I could have sold at least a dozen.

I shipped one to Painted Post, N. Y., and one to Ozan, Ark.

I felt it my duty to compliment you on the success of your advertising."

C. A. Dye, Belle Valley, Ohio.

If you have anything to sell or trade use our classified columns

FOR SALE—White clover honey in 60-lb. cans, new crop at 10c, old at 9c per pound. Chunk honey at $9.00 per dozen 5-lb. pails.
Joseph H. Hoehn, Ottoville, Ohio.

FOR SALE—White clover comb honey, new crop. Charles Guhl, Napoleon, Ohio.

FOR SALE—Clover honey; 5-lb. pail $1.10, postpaid.
Edward Hogan, 179 Gibson St.,
Canandaigua, N. Y.

EXCELLENT quality straight white clover honey in new 60's at 10c per pound. Sample. Omert & Son, Dubuque, Iowa.

FANCY CLOVER EXTRACTED—In new 60's, by the case or carload.
J. N. Harris, St. Louis, Mich.

EXTRACTED TUPELO—The greatest of all honeys; never granulates, mild, deliciously flavored. Sample 20c of barrel to car lots. Parcel post package delivered, half gallon, $1.85; one gallon, $3.55.
M. L. Nisbet & Bro., Bainbridge, Ga.

FOR SALE—Fine clover honey in new 60's. Free of disease. Twelve dollars per case.
Newman I. Lyle, Sheldon, Iowa.

WINKLER'S 1927 crop white clover honey in new 60-lb. cans (two cans per case) at 10c pound. Sample prepaid 20c.
Winkler Honey Co., Joliet, Ill.

FANCY white tupelo extracted and bulk comb, packed in five-pound tin.
J. L. Morgan, Tupelo Apiaries,
Apalachicola, Fla.

FOR SALE—White sweet clover extracted honey and fancy white comb in shallow frames. Quality goods that will please your trade. Write for prices.
The Colorado Honey Producers' Ass'n,
Denver, Colo.

FOR SALE—Best clover extracted honey in new sixties. Say how much you can use and let us quote you our price.
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HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co.,
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FOR SALE—Northern white extracted and comb honey. M. W. Cousineau,
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FOR SALE—Ohio white clover honey $12.00 per case; in ten-case lots, $10.80 per case; twelve 5-lb. pails, $8.00; chunk honey, two 5-lb. pails $10.00. Sample 15c.
F. W. Summerfield, Waterville, Ohio.

FOR SALE—White extracted honey in five-pound pails. Twelve pails, $9.60; fifty, $37.50; one hundred, $70.00, f. o. b. Jenison. Also northern bred Italian queens.
Jay Cowing, Jenison, Mich.

SHALLOW frame white comb honey and white extracted honey.
The Colorado Honey Prod. Ass'n,
Denver, Colo.

FOR SALE—Choice clover extracted honey packed in new 60-pound cans and cases.
J. D. Beals, Dwight, N. Dak.

HONEY WANTED—Several thousand cases white clover comb honey, size 4¼x4¼x1⅞. Must be white and strictly graded, fancy and No. 1. No other grade wanted; also extracted. Send sample, give quantity and price wanted. We pay cash.
A. L. Haenseroth,
4161 Lincoln Ave., Chicago, Ill.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont.

FOR SALE—Our own crop amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Ill.

HONEY FOR SALE—In 60-lb. tins. White clover at 12c lb.; white sage at 12c lb.; white orange at 13c lb.; extra L. A. sage at 11c lb. Hoffman & Hauck, Inc.,
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SUPPLIES

ROOT BEE SUPPLIES—Used 60-lb. cans, good as new, in clean wood cases, partition, two cans to case, 50c.
A. V. Small, Augusta, Kans.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly.
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Denver, Colo.

FOR SALE—Good second-hand 60-lb cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases.
C. H. W. Weber & Co., Cincinnati, O.

MISCELLANEOUS

LABELS, PRINTING, ENGRAVING—Finest work, lowest prices. Catalog free. Write Traders Printing Co., Springfield, Mo.

S. C. COMB RHODE ISLAND REDS—Exhibition egg strain. Four months old stock. Write for prices.
F. J. Smith, Castalia, Ohio, R. 1.

DIEMER QUEEN CAGE—A novelty in queen introduction. Indorsed by hundreds of beekeepers in U. S. and Canada. Directions with each shipment. Price 15 cents; eight, $1.00. Patented and manufactured by
J. F. Diemer, Liberty, Mo.

WESTERN HONEY BEE, 2823 E. 4th St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. $1.00 per year. Send for sample copy.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for $1.00.
Allen Latham, Norwichtown, Conn.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

WANTED

WANTED—Hand power extractor, cheap. Theodore Schedel, Pittsfield, Ill.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering.
Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

Honey and the Bee

is a little booklet of 28 pages, by J. H. Cook, published in Birmingham, England. It gives a few recipes for the uses of honey. It calls honey an antidote to alcoholism and recommends it mixed with an equal quantity of grease for a belt dressing to prevent slipping. This booklet sells at 5 cents, postpaid.

Confectionery Foreign Trade News

Imports during January and February amounted to 114,660 pounds, of which the United States contributed approximately 63,000 pounds. Imports for this period showed an increase of about 25 per cent over the corresponding period of 1926.

Iowa Queens

Requeening time is here; colonies need requeening now if they are to do their best next season. Young queens will fill the hive with young bees that will winter better.

One untested queen, $1.00

Tested queen, $1.50

ORIN STANLEY, LAMONI, IOWA

Requeening In Summer

By Allen Latham

A FELLOW who bought twenty colonies of black bees at a farm sale finds himself with more of a job on his hands than he expected. They are extremely cross and difficult to manage. Most of them are on straight combs, but some are not. After reading everything he can find about requeening, he is puzzled how to apply the suggestions to his particular case, and appeals for specific help to the writer.

It is rather late to begin with those twenty colonies, and unless honeyflows run well into fall, the fellow will have to feed to be successful. I see no better way than to proceed as follows:

Prepare twenty new hive bodies filled with full sheets of foundation. Place one body over each colony without anything between. To entice queen and bees into upper body, unless flow of nectar is good, place five-pound pails of feed directly over the top bars of the new body. Put a rim on, either full depth or deep enough to reach well up on pails of feed. Lay bran sacks over and about the pails of feed and place cover over all. Continue feeding until queens begin to lay in upper body. If the queens refuse to lay in upper body, then take frame of brood from such hives as possible and place one in upper body in place of a frame of foundation. Drive bees and queen up and insert queen excluder. With all colonies where queen has started above insert excluders after first drumming and smoking so that queens will run up. Three weeks later remove all the old lower bodies.

We now have the bees and mongrel queens in a new body on new combs. The next step is to requeen. To find these black and mongrel queens the fellow will best lay excluder over the top bars and an empty body or one with two or three combs in it over the excluder. Drum bees up into the empty. After three minutes or so of drumming, practically every queen will be found trying to get through the excluder.

After old queens have been found, requeen as follows:

Cage old queen for twenty-four hours within the brood nest. At the end of twenty-four hours, or longer, if preferred, kill old queen and plug the holes of cage solid full of candy. Now put the new queen into the cage and hang cage just where it was before in the broodnest. Do not disturb for four days at least.

If this fellow has a good honeyflow, he will be very successful in getting his twenty colonies ready for winter with Italian queens and new combs. If flow is poor, he may have to feed from fifteen to thirty pounds of sugar to each to make the whole thing successful.

Connecticut.

Poisoning the Bees — A Correction

Here is a criticism and a correcton concerning this subject, as mentioned in the July number, page 359. It is written by Dr. R. L. Parker of the Kansas State Agricultural College:

"In the American Bee Journal for July, you have an editorial, on page 359, entitled, 'Poisoning of Bees.' There is one point of advice on this account in the Chicago Tribune, which you refer to, which was omitted.

"The point is that the poison cutworm bait should be spread on the land or plants at dusk. In this way the cutworms come out and feed in the dark, and by morning the material has dried sufficiently so that it is not attractive to bees. If this material is applied during the day it will not serve its purpose, since it dries out and the cutworms are active only at night.

Market In Switzerland

A recent report from James R. Wilson, American Consul for Switzerland, is to the effect that the demand for honey in Switzerland was greatly increased durihg January and February of this year by prevalence of the influenza epidemic.

During this time there were reported in Switzerland 115,000 pounds of honey at a wholesale price of from 30 to 40 cents per pound. About half of this was imported from the United States.

Since that time honey has been coming in at a normal rate.

From his report it would appear that there are possibilities of establishing a general trade with Switzerland in American honey.

Artificial Honey

A newspaper clipping sent to this office by W. Klabuhn, of Cleveland, tells of the arrest and fine of $100 to a man selling another product as honey. It seems that sugar syrup was flavored with oil of rose geranium and sold as honey. The arrest and fine followed. The pure food laws are a real protection to the honey producer and to the public who buys his product.

SAVE MONEY—

Minnesota and Wisconsin Beekeepers

—SAVE TIME

Save money by ordering Lewis and Dadant goods at factory prices from Winona, Graceville, or Brainerd, Minnesota

Save time in short hauls. We like rush orders, as we buy in car lots and ship same day order is received

Dadant's Wired Foundation and Lewis Slotted Bottom bar Frames on hand at all times

Standard Lumber Company

Winona — Graceville — Brainerd, Minnesota

High Grade Italians

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Three Banded, Purely Mated Health Certified

Carefully Selected

12 for $10.00

Safe Arrival and Satisfaction Guaranteed

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CHICAGO

WE KEEP A COMPLETE STOCK

HIVES—Buckeye and Standard
ROOT SECTIONS, ALL STANDARD SIZES
AIRCO FOUNDATION, SINGLE-PLY AND THREE-PLY
SMOKERS, ALL SIZES
VEILS, WIRE AND TULLE VEILS
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GOLDEN ITALIAN QUEENS

Only one grade select. Safe arrival and satisfaction guaranteed

Untested 80c, 6 $4.50; 12 $8.00

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Achord Queens

The Best of Pure Three-Banded Italians

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Select Young Laying Queens now

75c EACH

any number

If large lots are wanted write for prices stating how many you can use

W. D. ACHORD

Fitzpatrick, Ala.

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Minnesota and North Dakota lead in the production of sweet clover seed. Acreage increasing rapidly. In six counties in northeastern North Dakota there are about 122,000 acres of sweet clover. Climatic conditions are extremely favorable for bees; warm summer days and cool nights. Write for FREE BOOK on agricultural resources of Minnesota and North Dakota. LOW ROUND TRIP EXCURSION RATES.

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Great Northern Railway, Dept. J-2
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MOTT'S NORTHERN BRED ITALIAN QUEENS

All select queens. No disease. Replace free all mismated queens. Safe arrival insured. Satisfied customers now 22 years. List free. Select untested, $1.25 till June 1; $1.00 thereafter. Select tested, $2.00. Virgins 50c. Michigan bounded on the north and east by Ontario, Canada.

E. E. MOTT & SON, Glenwood, Mich.

Wagner

CATALOG FREE

Invaluable to garden lovers—tells how to beautify home surroundings. Gives pictures and description of Wagner hardy flowers, trees, and shrubs. Explains the mail service Landscape Department. *Write for catalog* 217

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As long as they last will go at cost prices.

Our regular stock of beekeepers' supplies, all number one material.

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Atten-SHUN

RIGHT DRESS!—those two commands make soldiers out of men.

Reverse them, and you have the essentials necessary to sell your honey. Give your packages the right dress and they will command the attention of the purchaser.
Small package sales is the stimulant which the honey market needs, whether it be comb or extracted.
Get a good label and stick to it.
By-the-way we are equipped to furnish you the labels promptly.
Have you seen our catalog? We have some new ones.

It's yours for the asking.

American Bee Journal
Hamilton, Illinois

Northern Bred Italian Queens

ALL QUEENS reared from mothers selected for gentleness and wonderful honey gathering qualities. An order placed with us will not disappoint you. Untested, $1; 25 or more, 90c. Tested, $2. We can make prompt shipment. Safe arrival and satisfaction guaranteed.

HOPKINS APIARIES
Withrow, Minn.

Beekeepers Take Notice

For thirty years we have specialized in the manufacture of **Sections** from the whitest selected Wisconsin basswood

We also manufacture hives, supers, frames and shipping cases

Write for our free illustrated catalog

Marshfield Manufacturing Company
Marshfield, Wisconsin

MACK'S QUEENS **75c** **EACH** ANY NUMBER

Every queen guaranteed to make a satisfied customer or money back. A good young queen in every colony now will mean a maximum honey crop next season

Herman McConnell **Robinson, Ill.**

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Bee Supplies

Root's Goods at factory prices with WEBER'S service. Send us a list of your wants and we will quote you prices that will save you money.

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Three-Band Italian Queens

Yancey Hustlers Get the Honey

Every queen reared under the best of conditions. Large, vigorous and prolific. Every queen select. Why not buy the best when they cost only a trifle more than the cheapest.

Letters from leading producers all over the country prove they are the best.

Queens—Yellow beauties, untested, $1.00 each; $9.00 per dozen; $65.00 per hundred. Tested, $1.50 each; $15.00 per dozen.

Package Bees—Now booking orders for next spring delivery.

Satisfaction guaranteed on everything

Caney Valley Apiaries **Bay City, Texas**

SAVE TIME—SAVE WORRY

DADANT'S WIRED FOUNDATION

Can be nailed into Lewis Slotted Bottombar Frames in a jiffy.
And such wonderful combs!

Sold by all dealers in Lewis Beeware and Dadant's Foundation

QUEENS 50c EACH

Any number. By return mail or to suit your convenience in introduction. Every queen must be O. K. or she doesn't go. Nothing cheap but the price. "We strive to please with better bees." Constantly looking to improvement. Twelve years' experience in queen-rearing on large scale, with every facility provided, enables us to put out queens of highest quality; large, vigorous, prolific, and beautiful in color. throwing bees of uniform yellow color true to strain, gentle and great hustlers. Pure three-banded Italians only. Pure mating and safe arrival guaranteed. Never had any disease here.

JENSEN'S APIARIES **Crawford, Miss.**

The Dadant System of Beekeeping

By C. P. DADANT

Spanish, French and Italian editions also

Covers the results of sixty years of beekeeping in the Dadant family. Shows the reason they have adopted the large hive, how to use it, and the method of management employed. Also many sidelights on wintering, supering, harvesting, etc.

Cloth bound, 58 illustrations, 115 pages

PRICE $1.00

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SPECIAL LOW PRICE

This valuation compilation of all the laws ever formulated to govern the conduct of beekeeping is a valuable addition to the beekeeper's library. All precedents and actual court cases are given in full.

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$1.00

Combination price with one year American Bee Journal $1.75

AMERICAN BEE JOURNAL, Hamilton, Ill.

QUEENS

Miller's Old Reliable Three-Banded Italians at reduced prices for balance of season. This is the first time our advertisement has appeared during 1927, for our old customers took all the queens we raised up to July. Which proves to us that our queens are giving satisfaction.

Untested—One, 80c; 12, 75c each; 50, 65c each; 100, 60c each.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

RED STICK QUEENS

SELECT ONLY

50c EACH

1 OR 100—NO WAITING

They are as *Red* as ever and they *Stick* thousands of eggs where some queens let the bees stick honey

RED STICK APIARIES
BATON ROUGE, LA.

Golden Queens and Banded Bees

Untested queens.....$1.00 each
Tested queens.....$1.50 each
Bees.....$1.50 per lb.
Nucleus.....$1.50 per frame

Bees inspected; free from disease

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QUEENS—1927

Nineteen years in business. Will give you perfect satisfaction. Golden or three-band stock, bred separate, and ready to ship early in April. One untested, $1.00; twelve for $9.00; in lots of 100 or more, 75c each.

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Choose Labels Wisely

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They sell honey and are priced right.
Send for complete catalog

AMERICAN BEE JOURNAL
HAMILTON, ILL.

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2½-lb. cans, per case of 24	$1.25
2½-lb. cans, per carton of 100	4.00
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5-lb. pails, per carton of 50	3.50
5-lb. pails, per carton of 100	6.75
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10-lb. pails, per carton of 50	5.00
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8-oz. capacity, per case of 24	$1.05
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To hold 24 sections 4¼x4¼x1⅞" with 2" glass and corrugated pads 10, $3.90; 50, $17.50

SECTIONS—Per 1,000

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No. 1	$9.75
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No. 1	9.00
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All prices F. O. B. Reedsville, Wis.

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Thrifty Queens

50c
EACH

IN LOTS OF TEN OR MORE

Smaller Lots 60c ea.

Safe arrival is guaranteed in the U. S. and Canada. Pure mating and satisfaction the world over.

Thirty-three years of careful breeding insures you of THRIFTY three-banded Italian Queens. An output of thousands of queens per month assures you of good delivery.

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5-lb. friction-top pails, per carton of 50	3.50
10-lb. friction-top pails, per case of 6	.90
10-lb. friction-top pails, per carton of 50	5.00
2½-lb. friction-top cans, per carton of 100	4.00
60-lb. square cans, per case of 2 cans	1.20
60-lb. square cans, per case of 1 can	.75
60-lb. square cans, in bulk, each	.40
24-oz. round glass jars, per case of 24	1.60
16-oz. round glass jars, per case of 24	1.25
6½-oz. tin-top tumblers, per case of 48	1.50

All above prices are f. o. b. Boyd, Wis.

Prompt shipment guaranteed

Write for our catalog and prices on our comb honey shipping cases

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Every Order is a Rush Order

DOES YOUR EXTRACTOR EXTRACT? DOES IT BREAK COMBS?

Let us tell you about our new honey extractor before you buy any other. It's different. No broken combs and the combs come out clean. Rightly priced

HONEY CANS—Carload buyers should write us. We have better cans and our prices are absolutely right. Let us prove it.

SUPERIOR HONEY COMPANY, Ogden, Utah, U. S. A.

Manufacturers of Bee Supplies

Direct branches at Idaho Falls, Idaho; Seattle, Washington; Los Angeles California

Agencies at Manhattan, Montana and Delta, Colorado

Glass and Tin Honey Containers

2½-lb. cans in cartons of 100	$4.00	car.
5-lb. pails in cartons of 50	3.50	"
10-lb. pails in cartons of 50	5.00	"
60-lb. tins, NEW, 2 tins per case	1.00	case
60-lb. tins, USED, 2 tins per case	.35	"
160-lb. kegs (the ideal container for both Buckwheat and Clover Honey)	1.20	each

GLASS JARS WITH GOLD LACQUERED CAPS

16-oz. Honey Capacity, 2 doz. per carton	$1.20	car.
3-lb. or Quart Capacity, 1 doz. per carton	.90	"

SPECIAL HAZEL-ATLAS TALL JARS

8-oz. Honey Capacity, 2 doz. per carton	$1.05	car.
16-oz. Honey Capacity, 2 doz. per carton	1.35	"
2-lb. Honey Capacity, 1 doz. per carton	.95	"

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AT SPECIAL PRICES. SEND FOR OUR PRICE LIST

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ALL GRADES—ANY QUANTITY

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QUEENS THAT ARE QUEENS

IMPERIAL THREE-BAND ITALIANS

THEY EXCEL IN

Honey Production
Prolificacy
Gentleness
Hardiness
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With these seven points in mind we have succeeded in producing a strain of bees which our customers claim are second to none. A trial order will convince you of the truthfulness of our claims. Why risk requeening your colonies with cheaply reared queens when you can secure the most carefully reared queens on the market today for just a few cents more? The best insurance for successful wintering and a bumper honey crop next season is to requeen with Coffey's Imperial Strain of Italians.

Backed by the strongest guarantee that we know how to word: **You must be satisfied or your money will be refunded.**
Queen Prices—Untested (but pure mating guaranteed), one to nine, 90c each; 10 to 24, 70c each; 25 or more, 65c each.

Queens clipped free of charge where requested

THE COFFEY APIARIES, P. O. BOX 8 **WHITSETT, TEXAS**

LOWER PRICES

5-10 FRAME DOVETAILED HIVES

Complete with bottom, improved cover, Hoffman frames, nails, staples—K. D. - - **$11.00**

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For 4¼x4¼x1⅞ sections, complete with holders, separators, follower boards, springs and nails—K. D. - - - - - - - **$3.90**

SECTIONS—Standard Beeway 4¼x4¼x1⅞ - - - - - - **$10.10 per 1000**
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Be sure to get our prices before buying

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QUEENS BERRY'S RELIABLE THREE-BANDED QUEENS QUEENS

At Special August Prices

Thirty-two years of select breeding, not all of the time in a commercial way, but as large honey producers, therefore breeding for our own use, gives us a pure three-banded strain of Italian bees unexcelled for gentleness, disease resisting qualities and honey production. Our breeding queens are selected from over two thousand honey gathering colonies owned and controlled by us in the North and South. Special attention is given at all times to honey production, non-swarming qualities, hardiness and disease resistance. We have large apiary interests in Nebraska, Wisconsin and Manitoba, Canada. We know from test that we have what the honey producer demands.

AUGUST PRICES

Untested select queens, 60c each; 25 to 50, 55c each; 100 only $50.00

All queens are guaranteed to be purely mated and to give entire satisfaction. We also guarantee safe arrival, and, when desired, clip wings free of charge. Special circular on request.

QUEENS M. C. BERRY & CO., Box 697, Montgomery, Alabama, U. S. A. QUEENS

QUEEN TALKS—BY M. J. DEYELL, APIARIST

Seeing is Believing

TALK NO. 20

On May 10 of this year the writer took charge of a neglected two-colony apiary. One colony had a vigorous young queen. The other had an old queen.

The colony headed by the young queen continued to forge ahead, while the colony with the old queen slowed down in brood rearing. Super room was given each colony, as needed.

At present the colony with young queen has four full-depth supers of honey, while the other colony has only two full-depth supers.

Now here is the point to the story: The old queen failed just at the critical time, and consequently her colony stored about 100 pounds less than the colony with young queen that stored close to 200 pounds surplus. Enough said. Have every colony headed with a young, prolific queen in the fall.

ROOT QUALITY ITALIAN QUEENS

GIVE OUR THREE BANDED ITALIANS A CHANCE TO PROVE THEIR MERITS. THEY WILL PLEASE YOU

Quantity—	1 to 9	10 to 49	50 or over
Untested	$1.25 each	$1.00 each	$0.85 each
Tested	2.25 each	2.00 each	1.85 each
Select Tested	5.00 each		

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True Label Characters

Designs that compel attention
Colors that blend and please
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Our labels and selling helps meet these requirements at reasonable prices

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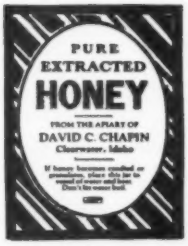
American Bee Journal, Hamilton, Illinois



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H. J. Pfiffner, Emmetsburg.
Bruns Seed Co., 318 W. 2nd St., Davenport.
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Harry A. Pease, Shenandoah.
D. L. Ginger, Langdon.
H. C. Jones, Marathon.
Bert Gander, Bayard.
F. H. Stacey, Guthrie Center.
T. Lehman, Elgin.
W. A. Chipman, Burt.
Dr. C. C. Wallace, Rock Rapids.
C. L. Pinney, Le Mars.
Loos Seed Co., Oskaloosa.
M. D. Johnson, Webster.
Lenock & Cilek, Iowa City.
John Auckland, Fairfield.
Albert Glattly, Alta Vista.
Waterloo Hardware Co., Waterloo.
J. F. Van Syoc, Mt. Pleasant.

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KENNEDY & SONS, LAWRENCE.
Coon Hardware Co., Parsons.
B. F. Ogg, Ottawa.
F. H. Budden, Manhattan.
Meador Groc. Co., Larned.
Charles Kirby, Nickerson.

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Yopp Seed Co., Paducah.
Benton Smith & Co., Canada.
R. J. Colliver, Moorefield.

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John St. Romain, Marksville.
Monroe Seed Co., Monroe.
J. H. Sanderson, Campti.

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F. C. Howard, Stoneham (Middlesex Co.)
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J. B. Perkins, 22 Churchill Ave., Campello.
W. C. Nelson, 35 King St., Holyoke.

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Peterson-Biddick Co., Crookston.
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STANDARD LUMBER CO., GRACEVILLE.
STANDARD LUMBER CO., BRAINERD.
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J. A. Snyder, Worthington.
L. G. Hoovel, Jackson.
Hove & Overboe, Audubon.
Sulerud & Lovsness, Halstad.
O. J. Fossen, Fergus Falls.

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The Smith Company, Jackson.

MISSOURI

CLAY T. DAVIS, CAMERON.

MONTANA

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Dr. W. E. Kindle, Syracuse.
Gunn Seed Company, Lincoln.
Newton Hardware Co., Orchard.
Johnson Seed Co., Grand Island.
Kearney Hardware Co., Kearney.
Boyd Hardware Co., Columbus.
Kregel Windmill Co., Nebraska City.
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NEW MEXICO

ROSWELL SEED COMPANY, ROSWELL.

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F. B. Loomis, Rushville.
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Harvey Seed Co., 65 Ellicott St., Buffalo.
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Blake-Pate Seed Co., Greensboro.
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FARGO SEED HOUSE, FARGO.
Albert Larson & Co., Cooperstown.
H. H. Hirschy, Lisbon.
Holthusen Bros., Wahpeton.
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Horn Seed Co., Oklahoma City.
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Central Hardware Co., Tomah.
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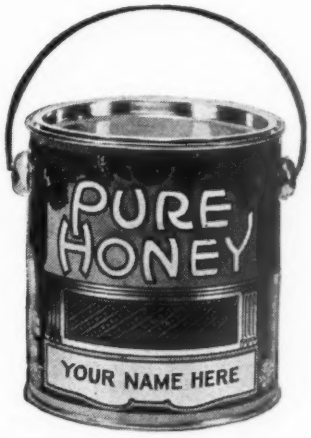

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Colorado Honey Producers Association, Denver, Colo.

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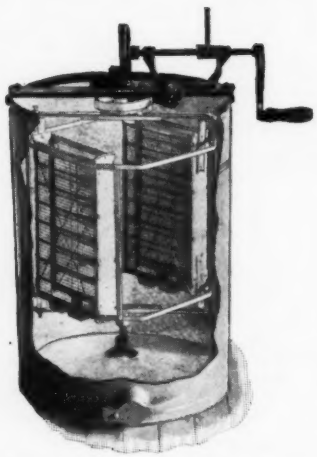

Root two-frame Reversible Extractor, suitable for an apiary of 10 to 25 colonies

IN 1867, A. I. Root built the first practical honey extractor, the Novice. He recognized the importance of a simple, sturdy construction. Today, many extractors testify, during each season's run, to the quality of the material used. Next came the reversible type not only in the two frame, but in the fours and eights.

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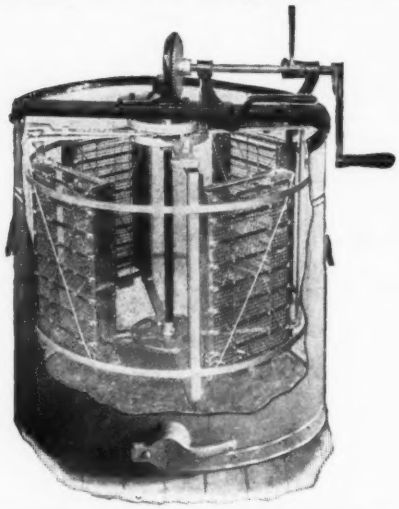

Four-frame Multiple Reversing Extractor, suitable for an apiary of 25 to 100 colonies

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Novice used for 39 years good for 20 years more

"I did not purchase this Novice extractor new, but my neighbor, Mr. Phillip Rath, did, and he kept the extractor for about 20 years, then he wanted something handier, and he sold it to me. I do not think there is an extractor in the country that extracted more honey than this one, for when Mr. Rath had it, all the neighbors borrowed it to extract their honey. It is good for 20 years more. The way Mr. Rath and I figured out, the extractor would be 39 years old, and it always gave good service."

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Old eight-frame turns out 6000 pounds per day

"The old eight-frame reversible extractor that we purchased from you ten years ago this summer is still in good condition, and we seeno need of making any change. Two of us have turned out as much as 6000 pounds in a short day, which seems very satisfactory to us."

W. J. Manley & Son, Sandusky, Michigan.

If we bought another it would be a Simplity

"In regard to your new extractor, I would say that I am strongly of the opinion that the Simplicity is the best extractor that I have ever had anything to do with. We never pay any attention as to whether we load old or new combs together. It is almost impossible to get the honey fast enough to keep the Simplicity busy."

Noah Williamson, Bronson, Iowa.

Forty-fige-frame Simplicity Extractor, (patent applied for) suitable for an apiary of 100 colonies and over

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Root QUALITY BEE SUPPLIES